



W. Knight del.

R. P. G. White sculp.

George Wilson

Ætat. Sue 78. An^o Domⁿⁱ MDCCX



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9 W d

A
Compleat Course
OF
CHYMISTRY

Containing not only the Best
Chymical Medicines

BUT ALSO
Great Variety of Useful
OBSERVATIONS.

The Third Edition,
Carefully Corrected, very much Enlarged,
and Illustrated with Copper Plates.

To which are added the Author's
Experiments upon METALS,

By Way of
APPENDIX.

By GEORGE WILSON, *Chymist*.

LONDON: Printed for JOHN BAYLEY, at
the Judge's Head in Chancery-lane. 1709.

Geometrical Course

OF

ARITHMETIC

Containing not only the Art

of Arithmetic



Curiously Corrected and Enlarged

By John Wallis

Experiments upon Metals

APPENDIX

By George Wilson

LONDON: Printed for John Baskin

the Bookseller in St. Dunstons Church-yard

To the Right Honourable

WILLIAM

Lord Paston,

Baron of PASTON,

Viscount and Earl of

Yarmouth.

MY LORD,

THE Kind Reception I have upon all Occasions met with from your Lordship, Emboldens me to lay the

A 2 follow-

The DEDICATION.

following Papers at your Feet; not that I pretend to offer any thing worth your Lordship's Favour, your Experience and Exquisite Skill in whatever relates to *Chymistry*, makes me too conscious to my self how little this deserves your Patronage.

But since I have no other way left me of acknowledging the many Obligations I lie under to your Lordship, I rather chose to run the Hazard of my Reputation on this account, then pass off the Stage with the Guilt of Ingratitude upon

The DEDICATION.

upon me, who must ever attribute all I now enjoy at Home to the Care and Goodness of your Lordship.

Accept then, my Lord, I beseech you, the Sincere, though weak Endeavours of my Declining Years, and judge not my Respect and Duty by the Meanness of the Performance. The Honour of your Lordship's Approbation will fortifie me against Censure: And however Defective I may seem, yet I have still the Hopes that I may, by this means, incite

A 2 others

The DEDICATION.

others to greater, and nobler Attempts of this kind, and put them upon a deeper Search into the more close Recesses of this so Useful, but Mysterious Art.

And here, my Lord, I cannot omit, with humble Submission, Suggesting to your Lordship, how Happy wou'd the present Age be, as well as Posterity, if so great a Genius as your Lordship wou'd please to borrow some few Minutes, from your other weighty Affairs, to collect the curious Observations you have

The DEDICATION.

have made in *Chymistry*, and communicate them to the World : What might we not expect from such indefatigable Industry, and so great a Capacity ! Even the admirable Mr. Boyle, were he alive, might with Pleasure see himself out-done, in what was his chiefest Darling and Mistress.

But I shall wave the Enlargement on this Subject, lest by attempting to give your just Praises, I should lessen that Character, which all who have the Honour to know your Lordship, must confess you truly deserve.

A 4 May

The DEDICATION.

May your Lordship enjoy a full Measure of Health and Honour ; and may after Ages with Admiration behold your Lordship's Excellent Virtues shining in a generous and noble Posterity, is the Earnest Prayer of,

MY LORD,

Your Lordship's

Most Faithful, Humble

and Dutiful Servant,

George Wilson..

T H E
P R E F A C E.



Shall not entertain the *Reader* with an Encomium on the Usefulness of *Chymistry*; or stop him here whilst I enumerate the many great Improvements in other Arts and Sciences which are owing to it; this has been done by many abler Pens than mine.

Yet I cannot but take notice, that from hence our Modern *Physicians* have the greatest, and (I would persuade my self) the best part of their *Materia Medica*; for I find the use of *Chymical Medicines* daily increase, by the constant Approbation of the most Learned in that noble *Faculty*; so that now there are very few noted Simples, either in the Mineral, Vegetable, or Animal Kingdom

P R E F A C E.

Kingdom, but what have receiv^d
some Advantage by *Chymistry*: an^d
we may reasonably expect frequen^t
Discoveries to the Benefit of Man-
kind, since *Nature* her self is the
capacious and fertile Subject of our
Art.

But to give some Account of the
Book, especially of this *Third Edition*:
you will find some Processes
common to all Operators, and
these I have made use of as things
necessary to my Design, but even
these I have much Improv'd, and
have annex'd to them many new
Observations concerning the way
and manner of working them,
which I have found not only con-
venient, but by the Experience of
more than fifty Years sometimes
absolutely necessary.

To this *Edition* I have added a-
bove forty Preparations, and care-
fully Corrected and Enlarged the
former ;

P R E F A C E.

former ; I have taken care to mention the true Use and proper Dose of each Medicine ; and I have so class'd all under such General Heads as they naturally belong to, that nothing should be wanting to make this Book answer the Title, and be a *Compleat Body of Chymistry.*

I have thro' the whole studied Brevity, and therefore I have rejected not only the frivolous and useless Trifles of other Chymical Authors, but also have declined *Mons. Lemery's* pompous way of Philosophizing upon the Processes. Neither was it my Business to criticize upon that celebrated Author ; but let the judicious Reader compare our Methods of working the same Subject, and he will in some things find a wide Difference, which I am content shall be put to the test of Practice, and then you will soon determine who is in the right.

My

P R E F A C E.

My Stile is intelligible, and that I think, in relating Matters of Fact, is sufficient ; some particular Expressions, *as fill half full, &c.* will I hop'd be pardon'd, for Dress and Ornament have not been my Care.

As long as God shall give me Health, I shall continue to divert my self in the Laboratory ; and what useful Appearances occur I shall faithfully communicate ; for I endeavour all I can, in my way, to be truly serviceable to the Public.

It may be objected, That I conceal the Preparation of my *Tinctura Anti-Rheumatica*. To which I answer,

First, That the Learned Physician is abundantly furnished with as good, if not more powerful Medicines against that cruciating Disease.

Secondly, The diligent Reader

P R E F A C E.

may really observe the Preparation of it scatter'd in this Book, under the various Heads, of which this Tincture is composed.

Thirdly, This Medicine having obtained an uncommon Reputation, it may be a comfortable Support for me and my Family, should I fall once more under the Frowns of Fortune. But, after all, in due time it shall be published.

As to the *Appendix*. The *Experiments* were added at the Desire of others, as Sceptical in the Doctrine of *Transmutation* as my self. And truly my long Experience, rather than Speculative Philosophy, has taught me to account for that *Accretion* of Gold, mention'd in the sixth Experiment. For (in a word) I believe all base Metals have some minute Particles of the nobler intimately mixt, which, when the base Metal is justly analyzed, are at liberty and do readily join; and this
Specific

P R E F A C E.

Specific Union of Particles in all matter, is perhaps perform'd by *Attraction*: thus tho I had an *Accretion* of my Gold, yet my Silver was proportionably diminished.

Men will have *Nostrums* in their Thoughts; therefore I am not concerned who differs from my Opinion, neither shall I say more upon this Subject, only refer my Reader to the Introduction before the Experiments.

The Introduction

AS in all Arts and Sciences whatever, there are certain Instruments and Terms of Art necessary to be known, before they can possibly be understood; so in *Chymistry* there are certain Requisites to every Operation before it can be performed; and these are,

First, The Characters dispersed in Chymical Authors; especially those most used by Physicians.

Secondly, An Elaboratory, in the Erecting of which Care ought to be taken that there be a good Light, Plenty of Water, and large Chimneys, for the ready Conveyance of obnoxious Fumes.

Thirdly, Instruments and Vessels, and these are of different sorts, and various Figures, according to their several Uses: you will find the Description of those most in use, in the Third and Fourth Tables.

Fourthly

INTRODUCTION.

Fourthly, Furnaces; which are also of different Forms, some for moist, and others for dry Heats: the moist are *Balneum Maria*, *Balneum Vaporosum*, &c. The dry are the Sand Furnaces, Reverberatories, or open Furnaces for naked Fire, &c. which may be seen at large in Chymical Authors. So I content my self with describing those that are necessary; as in the following Tables.

Fifthly, Lutes.

Sixthly, Degrees of Fire.

Seventhly, Such Terms of Art as you will meet with in Chymical Authors.

Chymical

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
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



CHYMICAL CHARACTERS







Air	△	Cement	Z
Alembic	XX	Cerufs	I h
Alum	O H	Cinnabar	ō ō
Amalgama	āāā ▲	Cineres Clavellati	U
Ana or of each ā an		or pot Ashes	
Antimony	ō ♦ ♦	Chrystal	Q
Aqua Fontana	V _m V ⁿ	Coagulate	HE
Aqua Fortis	V V	Common Salt	⊖ Ⓜ
Aqua Regia	R V	Copper or Venus	♀
Aqua Rosarum	R _{os}	Cornu Cervi	
Aqua Vitæ	Y	or Harts horn	CC
Arsenic	Y o-o	Crocus Martis	◆
As much as you please	QP	Crocus Veneris	⊕ C
As much as you will	QV	Crucible	X O
As much as is sufficient	QS		
Ashes	E A	Day	☉
Auripigmentum	☙ o-o	Destil	☼ J
		Destill'd Vinegar	☼ ☼ ☼
Balneum	B	Digest	Y 8
Balneum Mariæ	BMMB	Dram	z
Balneum Vaporis	BVVB	Drop	g ^t
Bole of Armenia	Y A		
Borax	λ M W	Earth	▽
Brick	□	Filings of Steel	⊙ →
		Filtre	3
Calcine	A C	Fire	△
Calx Viva	Y CV	Flowers of Antimony	⊖
Caput Mortuum	⊖ ⊖	Fix	Y Y






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
Tab. II.




Gold or Sol 
 Glass 
 Grain 
 Gum 







Half quantity 
 Handfull 
 Hour  

Ink 
 Iron or Mars 
 Lead or Saturn 
 Lime 
 Litharge 
 Lute 



Magnet 
 Marcasite 
 Mercury of Saturn 
 Month  


Night 
 Nitre 
 Number 

Oil  
 Ounce 





Parts one, } P. I. II. Pa.
 two or equal }
 Pound 
 Powder   
 Precipitate  









Pugil 
 Purify  



Quicksilver } 
 or Mercury } 






Quint-Essence 





Retort  

Salt Armoniac 
 Sal Gemma  
 Sand 




Scruple 
 Silver or Luna  
 Soap 
 Spirit  
 Spirit of Wine  


Stratum Super Stratum   

Sublime  
 Sulphur  
 Sulphur Vire 

Talk 
 Tartar  
 Tincture 


Tin or Jupiter 

Verdegrease 
 Vinegar 
 Vitriol 

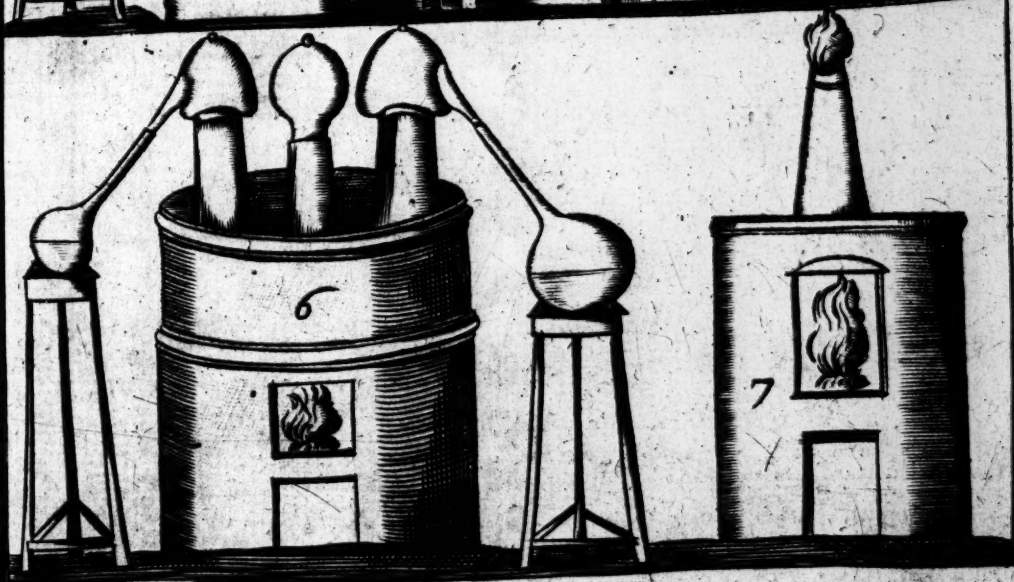
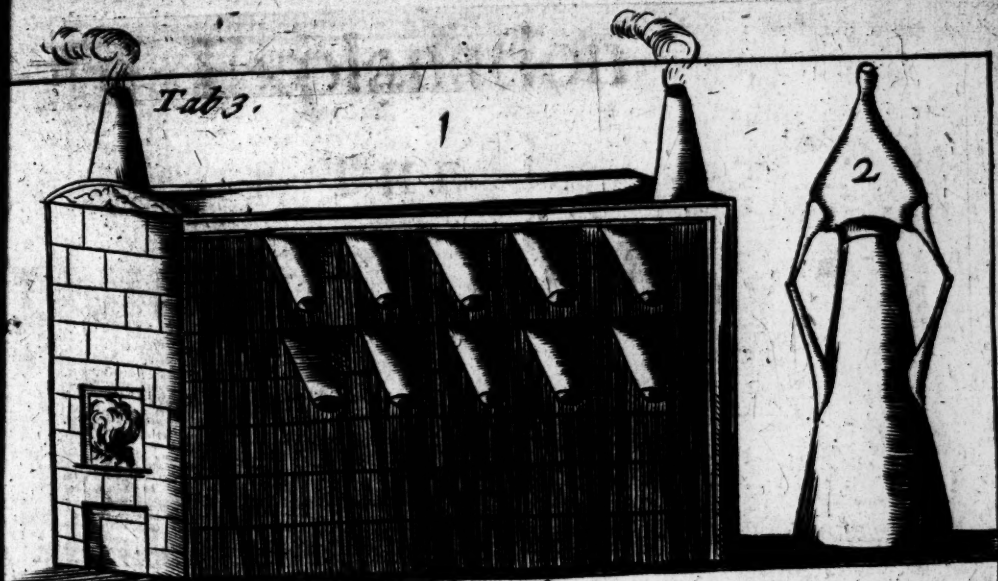
Urine 

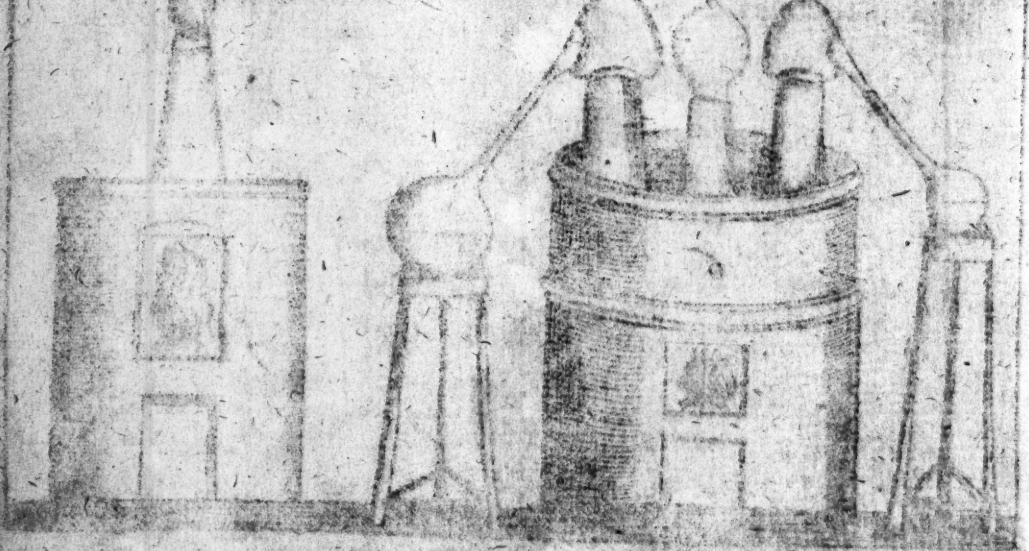
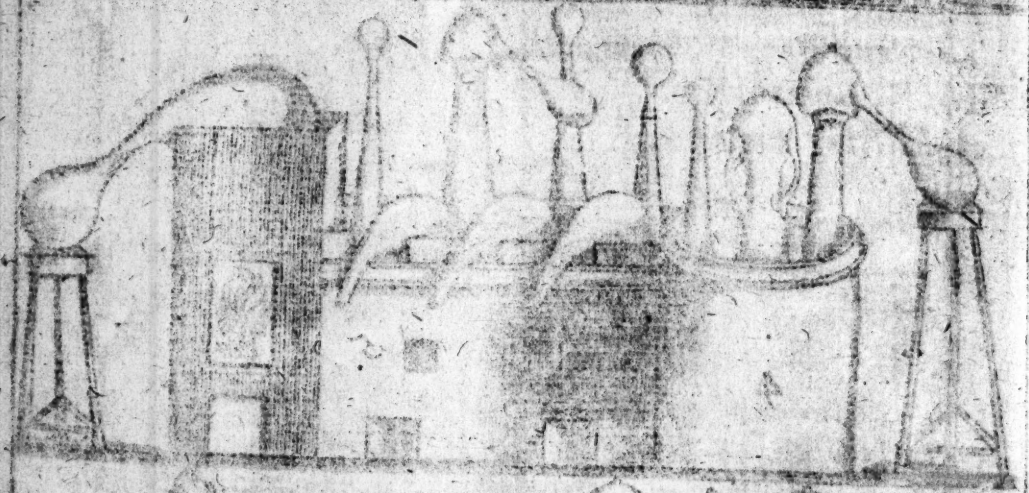
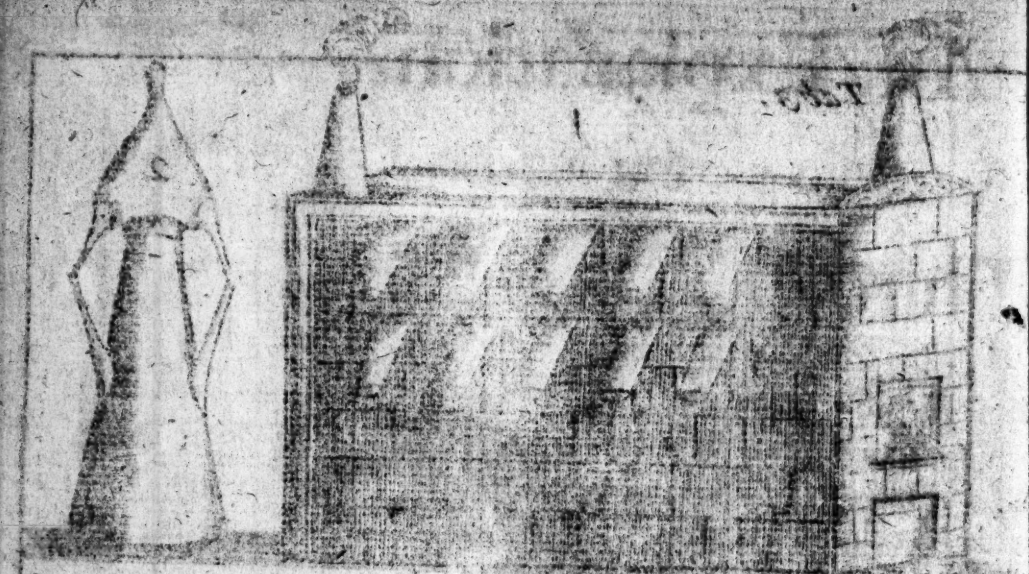
Water 

Wax 

Wine 

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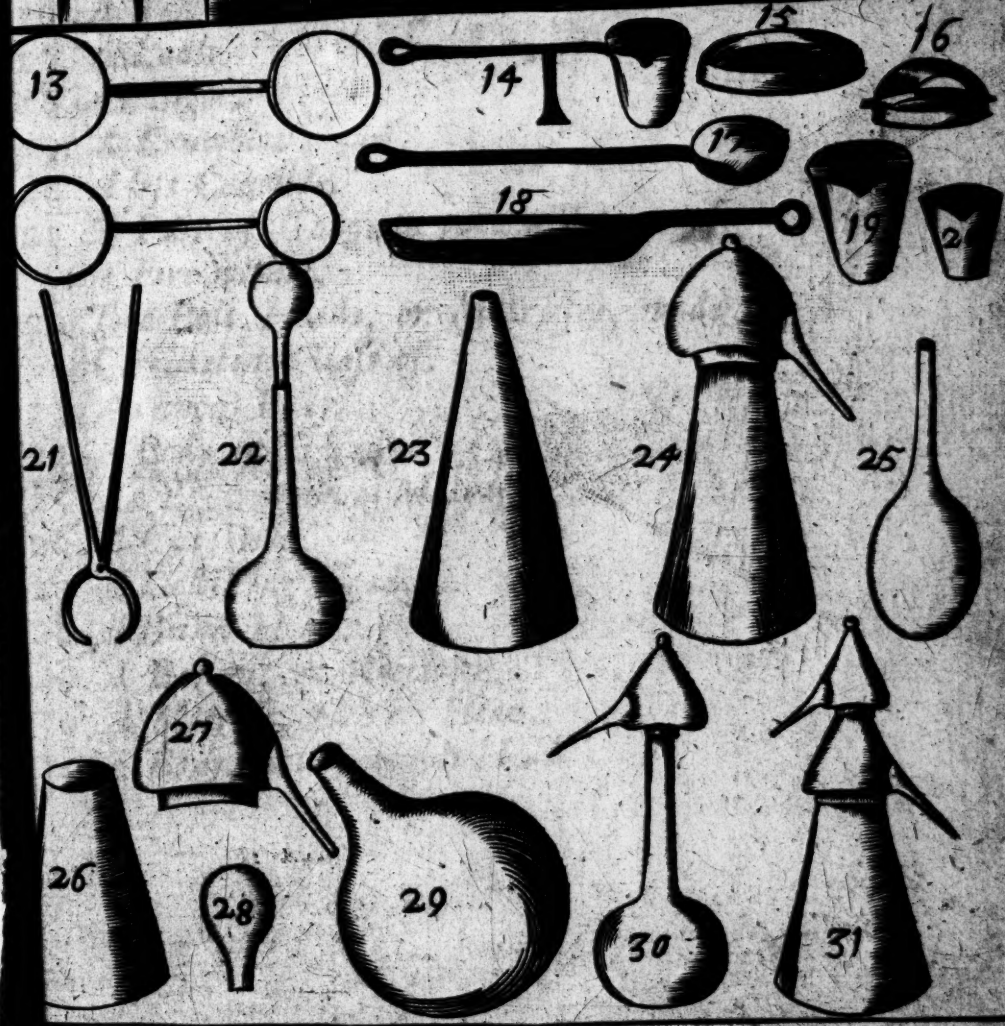
An Explanation

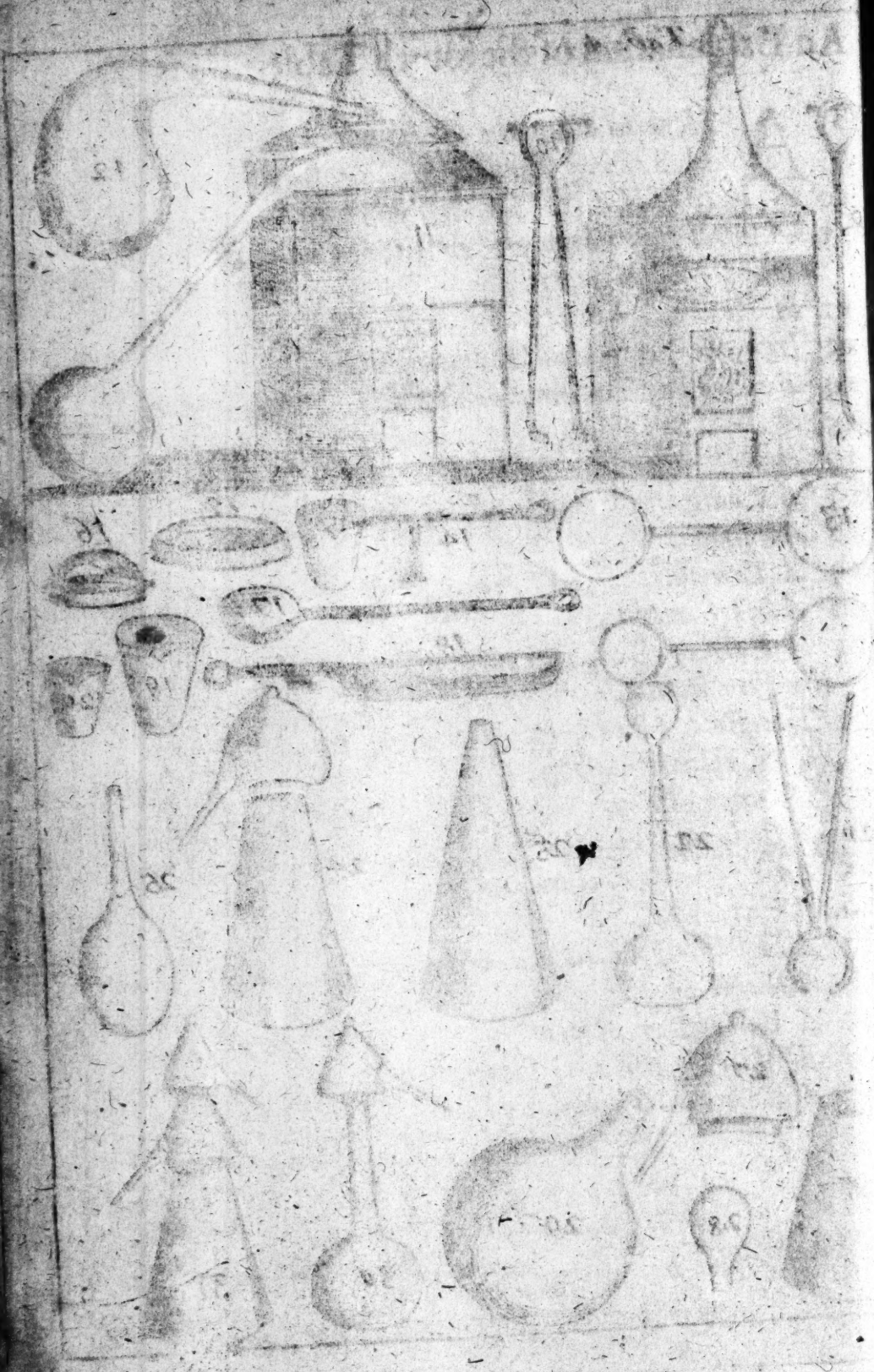
OF THE

Third TABLE.

- 1 **A** Reverberatory Furnace, to de-
stil with twenty long Necks.
 - 2 *A Pelican, or Circulatory.*
 - 4 *A Balneum at the end of the digesting
Furnace.*
 - 5 *The Sand Bath of the digesting Furnace.*
 - 6 *The Balneum Mariæ.*
 - 7 *A Melting Furnace.*
-

Tab: 4.





A

8

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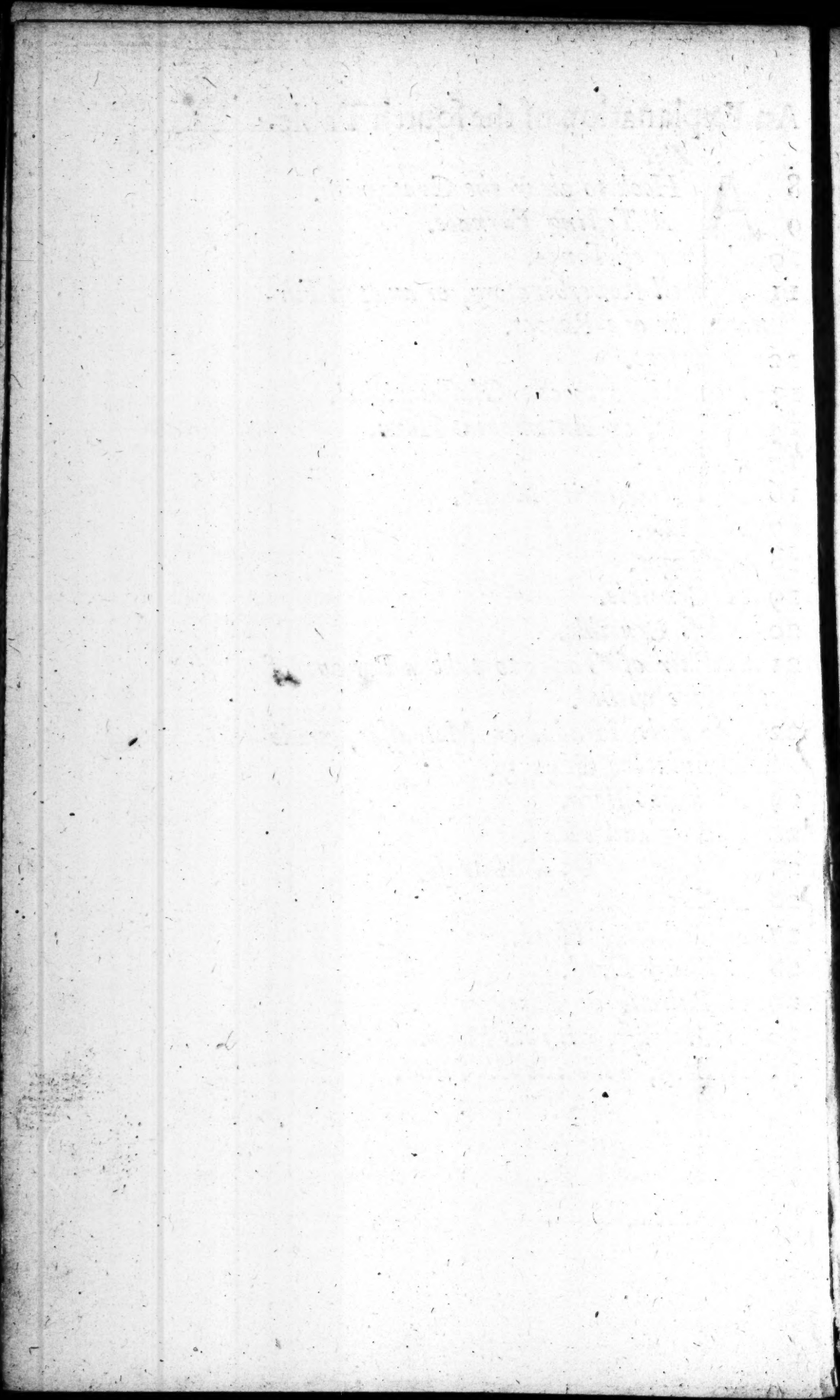
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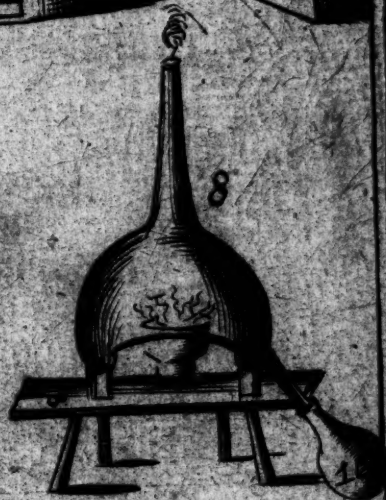
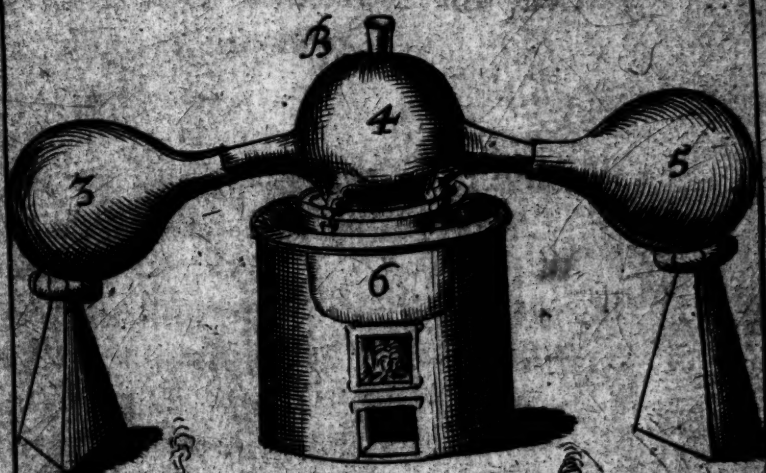
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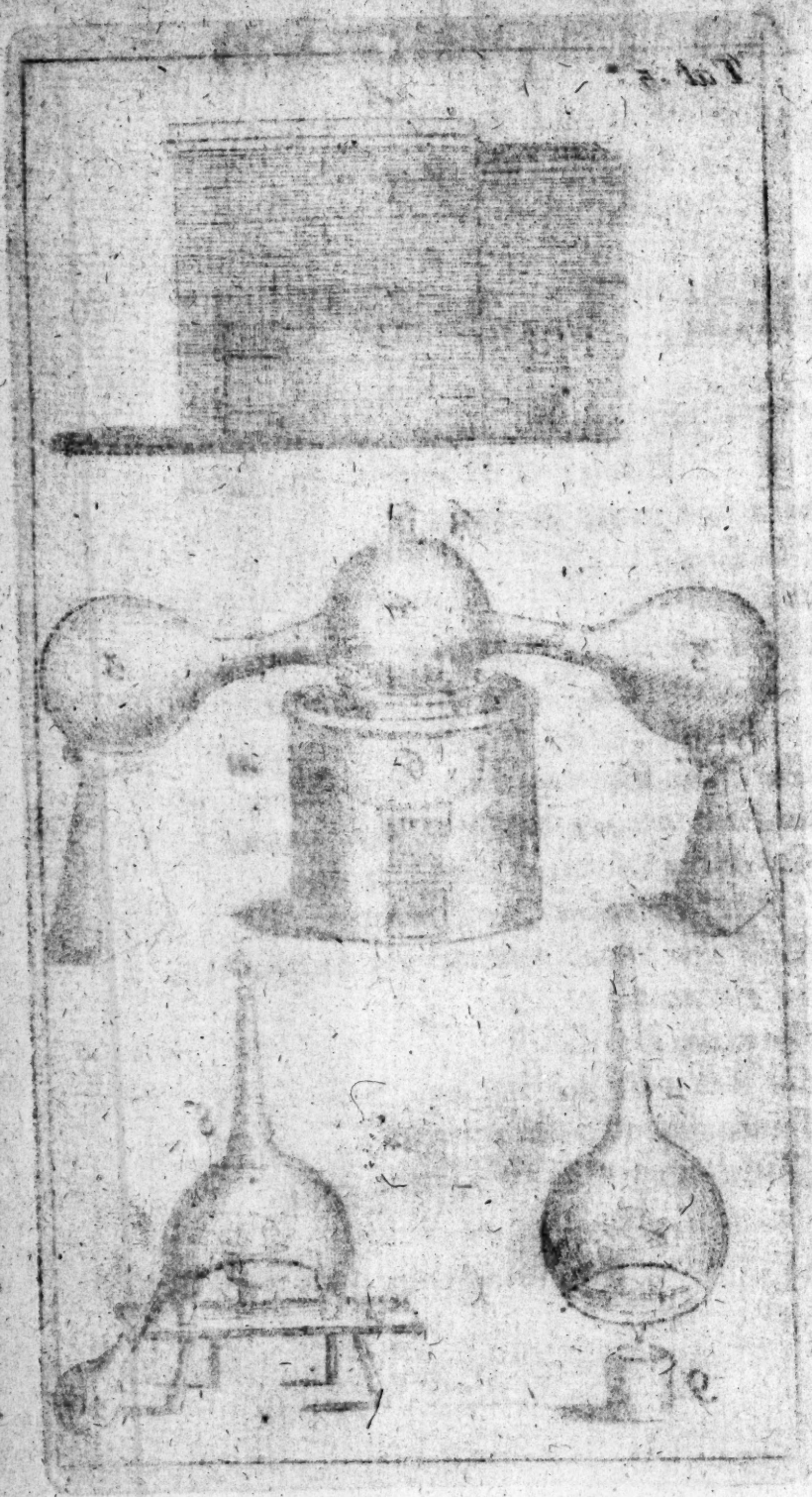
- 8 **A** Hook to clear the Grate with.
- 9 **A** Testing Furnace.
- 10 **A** Pair of Tongs.
- 11 **A** small Reverberatory, or an open Furnace, for one Retort.
- 12 **A** Retort.
- 13 Iron Rings to cut Glasses withal.
- 14 **A** Cone, or Antimonial Horn.
- 15 **A** Test.
- 16 **A** Test with its Muffle.
- 17 **A** Ladle.
- 18 **An** Ingot.
- 19 **A** Crucible.
- 20 **A** less Crucible.
- 21 **A** Pair of Tongs to take a Pot out of the Fire withal.
- 22 **Two** Bolt Heads, or Matrasses, made a Circulating Glass of.
- 23 **An** uncut Body.
- 24 **A** Body and Head.
- 25 **An** Egg, or Oval Matrass.
- 26 **A** Cut Body.
- 27 **A** Destilling Head.
- 28 **A** Blind Head.
- 29 **A** Ballon, or Receiver.
- 30 **A** Matrass, with its Head.
- 31 **A** Body, with a double Head.



Tab. 5.

A





An Explanation

OF THE

Fifth TABLE.

A **T**HE great Furnace, in which the Flowers of Brimstone are sublimed in a great quantity.

1 The Fire-Place.

2 The Asbes-Hole.

3 The Door into the Body of the Furnace, by which the Flowers are taken out.

B The little Furnace in which Flowers of Sulphur are sublimed in small quantity.

4 The Head, made of Earth or Iron.

5 5 The two Ballons, or Receivers.

6 The Vessel which contains the Sulphur in the Furnace.

7 The plain Bell-Glass.

8 The Bell with a Verge and Beak.

9 The Receiver to the plain Bell.

10 The Receiver to the Verged Bell,

ALL EXHIBITION

OF THE

THE GREAT BRITAIN

AND IRELAND

EXHIBITION

OF 1851

THE GREAT BRITAIN

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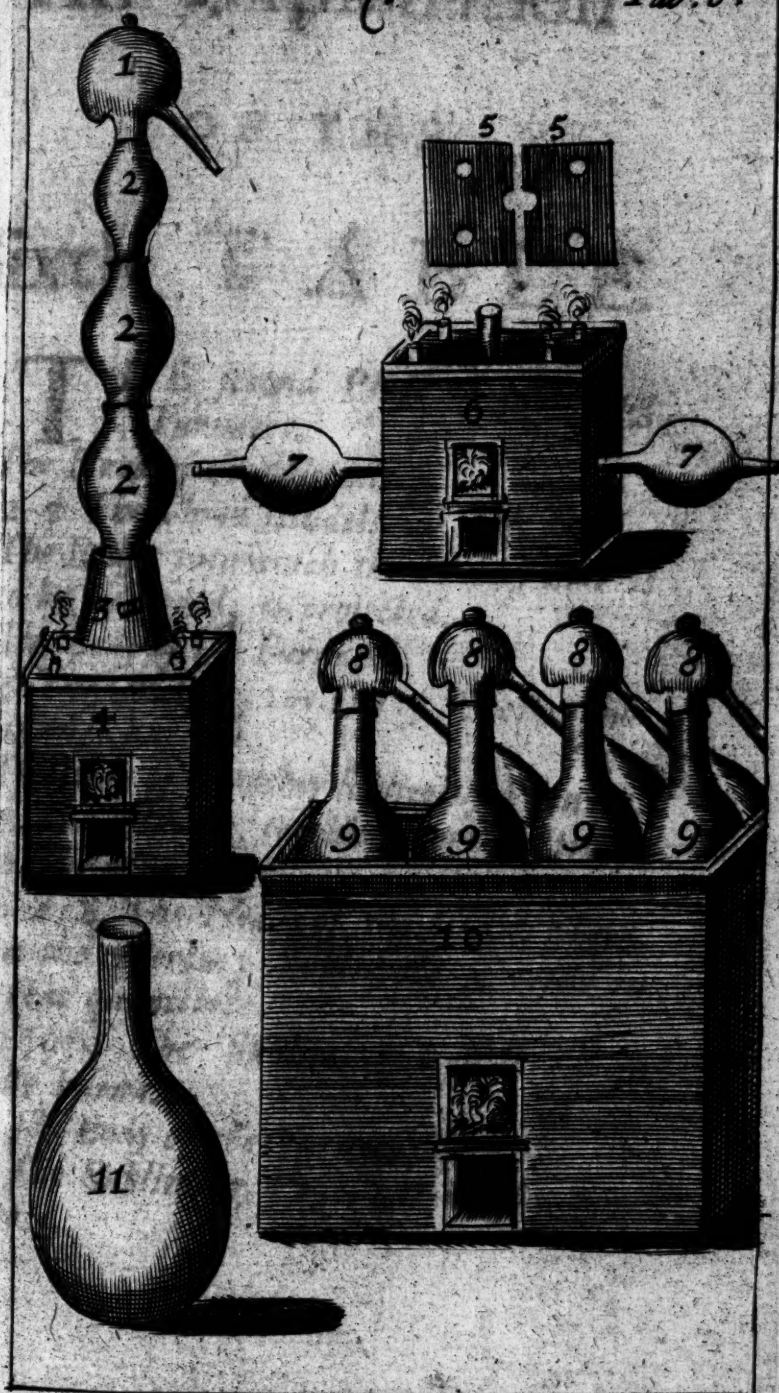
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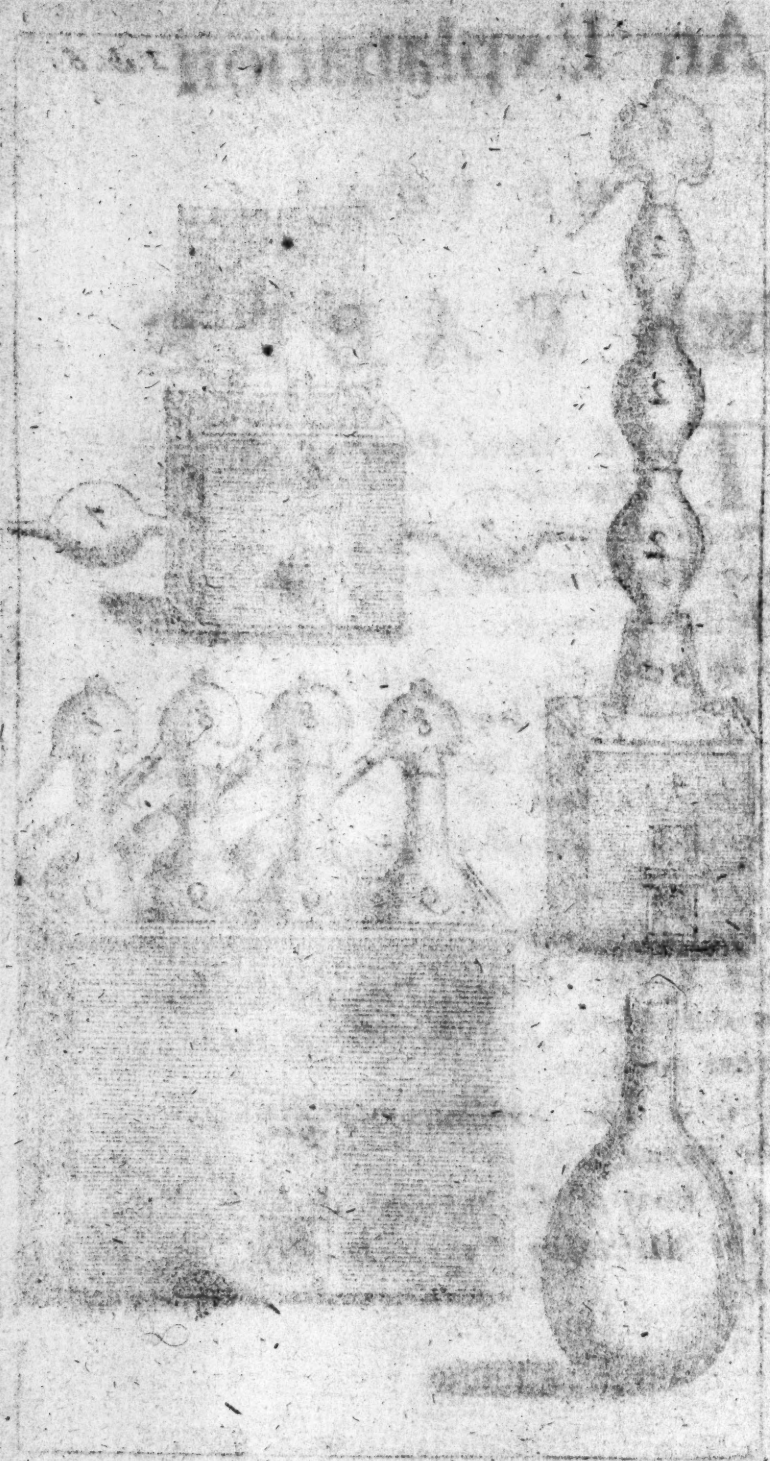
THE GREAT BRITAIN

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Tab. 6.





An Explanation

OF THE

Sixth TABLE.

C **T**HE second Plate of subliming
Furnaces.

- 1 The Head of the Aludels.
- 2 2 2 The Three Aludels.
- 3 The Body, into which the Matter that is to be sublimed, is projected.
- 4 The Body of the Furnace.
- 5 5 The Covers of the Top of the other subliming Furnace.
- 6 The Body of the other subliming Furnace.
- 7 7 The Aludels, to which more Receivers may be adapted.
- 8 8 8 8 The Heads of the Vessels wherein the Mercury Sublimate is made in great quantity.
- 9 9 9 9 The Subliming Vessels set in the Furnace.
- 10 The Body of the Furnace.
- 11 The Subliming Vessel out of the Furnace.

An Explanation

OF THE

SIXTH TABLE

CONTAINING THE

LIST OF THE

MEMBERS OF THE

COMMISSIONERS OF THE

LAND OFFICE

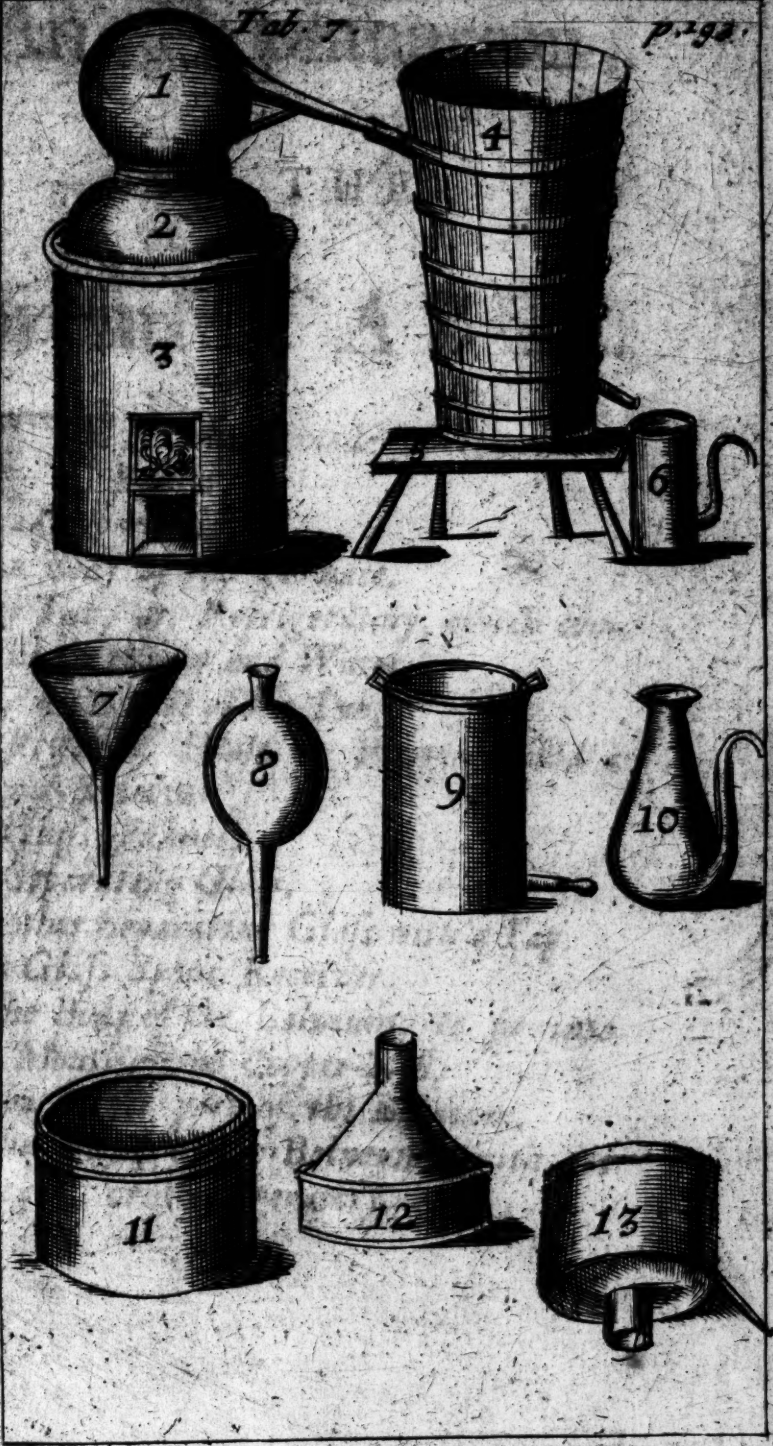
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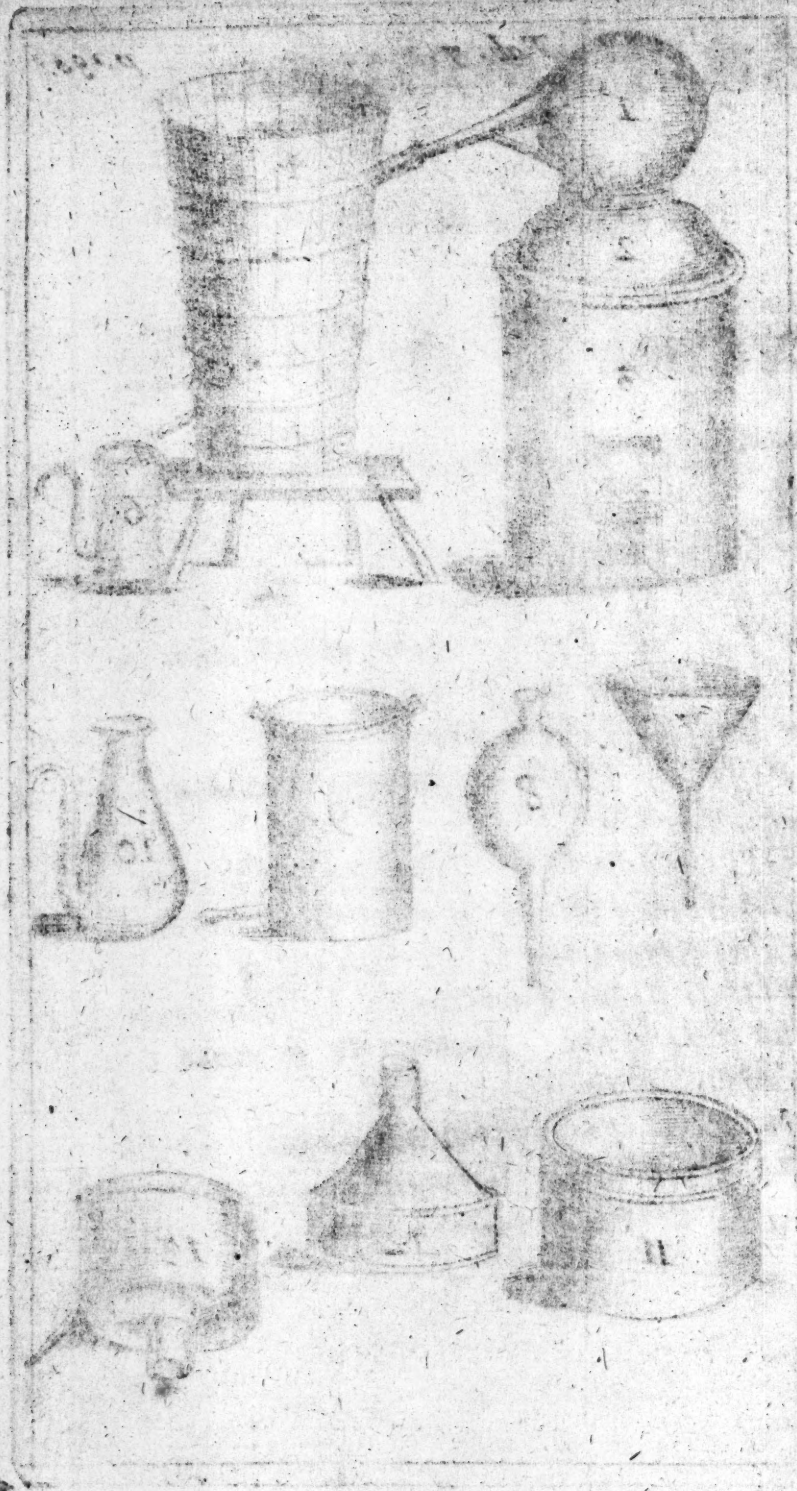
STATE OF

NEW YORK

FOR THE

YEAR 1860





An Explanation

OF THE

Seventh TABLE.

1 **T**HE Head made of Copper or Pewter.

2 The Copper-Still.

3 The Body of the Furnace.

4 The Tub, or Refrigeratory, which contains the Worm and Water.

5 The Supporter of the Tub.

6 A Vessel of Glass or Pewter, call'd a Spout-Receiver.

7 A Glass Funnel.

8 A Separating Glass.

9 Another Separating Glass with a Tap.

10 A Glass Spout Receiver.

1 The Body of the Balneum, to fit into the Mouth of the Copper-Still.

2 The Upper part of the Balneum.

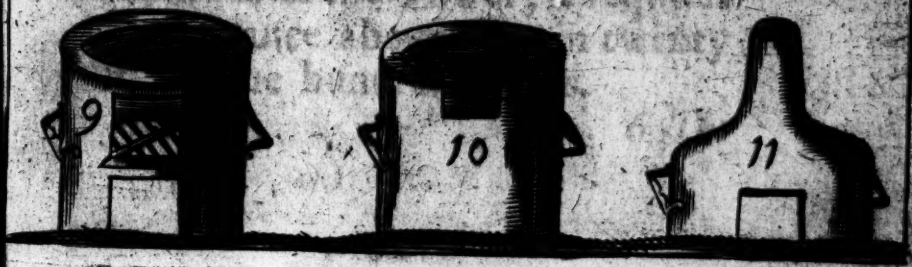
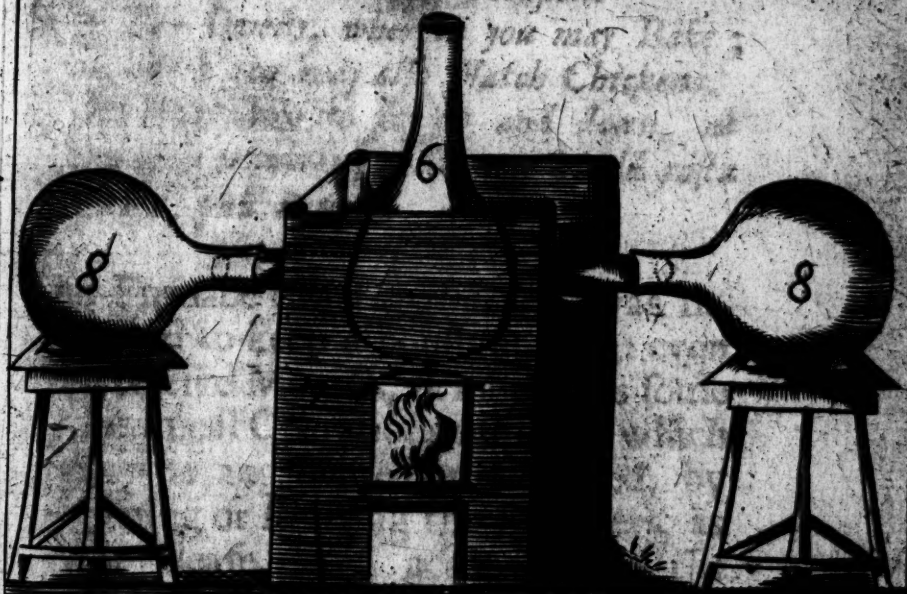
3 The Head of the Balneum, with its Bucket, or Refrigeratory.

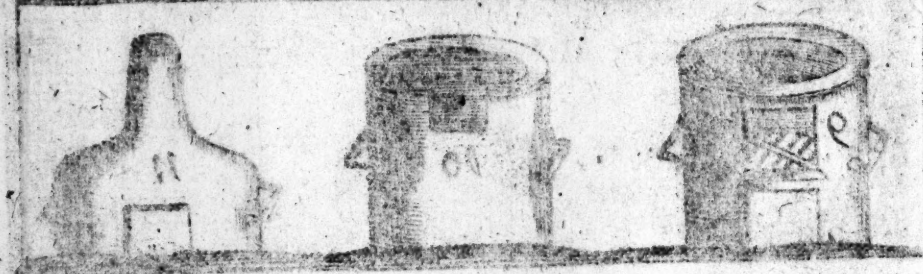
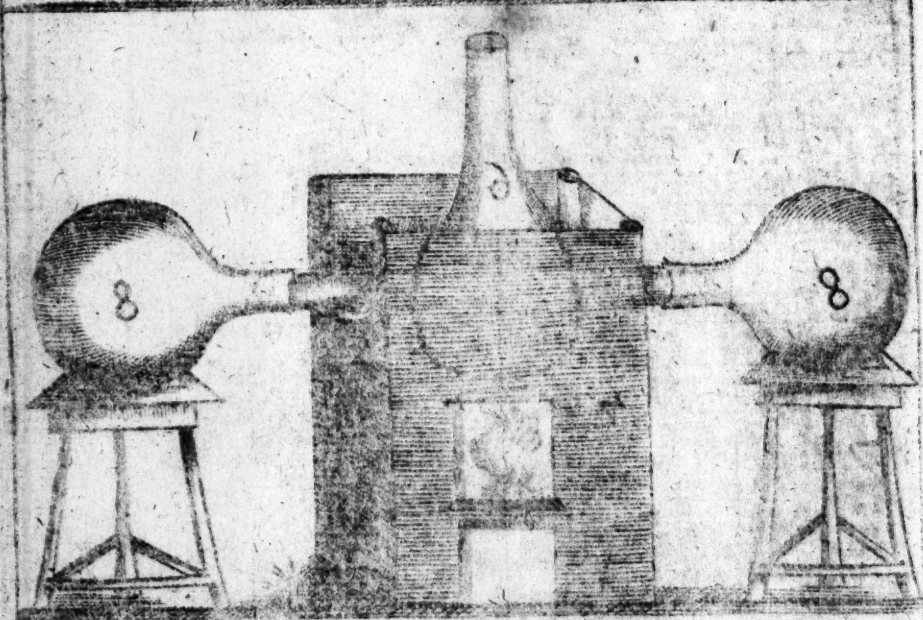
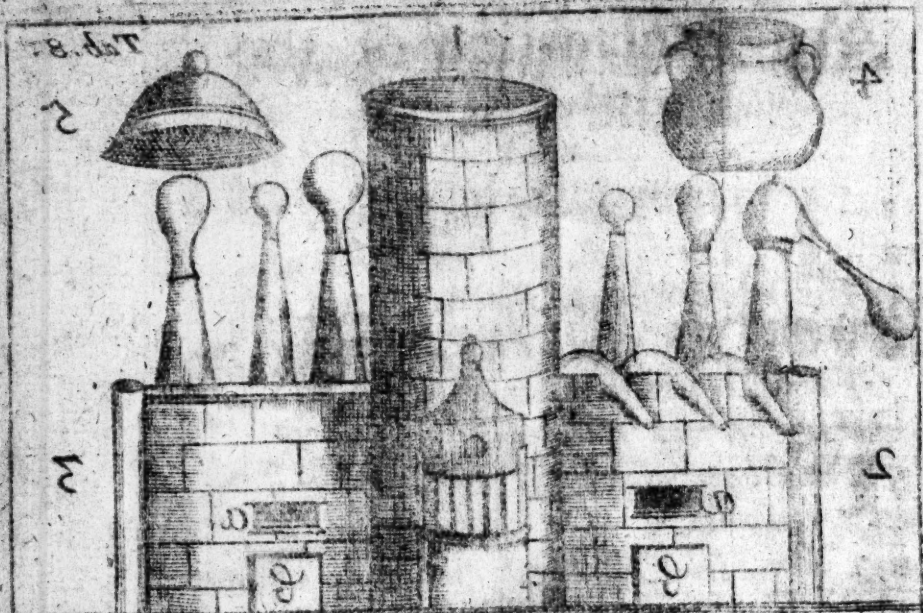
An Introduction

OF THE

Second Part

The first part of the work is devoted to a description of the various kinds of minerals which are found in the earth. The second part is devoted to a description of the various kinds of rocks which are found in the earth. The third part is devoted to a description of the various kinds of fossils which are found in the earth. The fourth part is devoted to a description of the various kinds of plants which are found in the earth. The fifth part is devoted to a description of the various kinds of animals which are found in the earth. The sixth part is devoted to a description of the various kinds of minerals which are found in the earth. The seventh part is devoted to a description of the various kinds of rocks which are found in the earth. The eighth part is devoted to a description of the various kinds of fossils which are found in the earth. The ninth part is devoted to a description of the various kinds of plants which are found in the earth. The tenth part is devoted to a description of the various kinds of animals which are found in the earth.





An Explanation of the Eighth Table.

- 1 **T**HE Tower of the Athanor.
- 2 The dry Bath of the Athanor.
- 3 The moist Bath of the Athanor.
- 4 A little Pot to place on the top of the Tower, wherein you may boil or stew any thing at your Pleasure.
- 5 The Cover of the Tower when the Pot is removed.
- a a The Holes by which you may cleanse the Flue when there is Occasion.
- b b The Ovens, wherein you may Bake ; in which you may also Hatch Chickens.
- c An Iron Door to slip up and down, as Occasion requires ; when you would rosta Pullet, pull it up.

The Furnace call'd an *Athanor*, was invented to keep a constant Heat even to twelve Months, or longer, as some Chymical Operations require, which may be augmented or decreased, by opening or shutting the Registers, as you please, and according to the Magnitude of the Tower ; it requires no Attendance above once in twenty four, or one hundred Hours.

6 The

- 6 *The Neck of the Vessel which contains the Matter you design to destil, or sublime.*
- 7 *The Body of the Furnace.*
- 8 *The Ballons or Receivers.*

This Furnace is to destil any Combustible Composition of Nitre, Sulphur, Antimony, &c. by projecting a little at a time into Fig. 6. and presently stopping the Orifice with a fit Stopple.

- 9 *The lower part of the Furnace from the Ashes-hole to the upper part of the Fire-hole.*
- 10 *The middle Part of the Furnace which contains the Destilling Vessel.*
- 11 *The Dome, or upper Part of the Furnace.*

This is a Portable Furnace, easily removed, in which you may melt, or destil in Balneo, Sand, or naked Fire, as you please to order it. The outside of the Furnace may be made of Copper or Iron, and it may be lin'd with a Lute or Fire-stone.

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Compleat Course

O F

Chymiftry.

Of LUTES.

To defend a Glafs in a naked Fire.



TAKE Yarmouth-Sand, Scoria of Iron, Tobacco-Pipe Clay, of each one Pound, Glafs, and fixt Nitre, of each four ounces, of coarse Tow, cut short, half a pound; dissolve the Tobacco-pipe Clay in Water, and beat the Glafs and Scales of Iron to fine Powder; then mix all together, beat and work this Mixture well, till it becomes a stiff Paste; spread it upon the Retort with a Knife, the thickness of a Half-crown, to the middle of the Neck of it; let it dry gently, after which you may use it.

B

With

With this Lute you may fasten the Receivers in the Destillation of Corrosive Spirits, *viz.* Ol. Vitrioli, Spirit of Nitre, Spirit of common Salt, Allum, Aqua Fortis, Aqua Regis, &c.

To Lute Lembecks.

Take Statch, Glue, Flour and Water boil'd, or Flour and Water well beaten together; any of these spread upon Slips of Paper will serve; but when you Destil, or Rectifie Spirit of Verdigrisee, Vinegar, Tartar, Guaiacum, Box, strong Spirit of Wine, Spirit of Sal Armoniac, or Harts-Horn, &c. you may use slips of Bladder, or Parchment, dipt in equal parts of Flour, and slack'd Lime, beaten into the Consistence of a Syrup, with the Glear, or white of an Egg.

To fortifie crackt Glasses.

Take the Scrapings of hard Suffolk-Cheese, and Calx Vive, of each a like quantity; beat them well together, with the White of an Egg, to the thickness of a Syrup; dip Linen Rags in this Mixture, and lay it presently upon the Crack. Remember you mix no more
at

at a time, than you use in the space of a Minute.

To Seal a Glass Hermetically, is to heat the Mouth of the Glass gradually, till it is red hot and pliable, which you may do either with such a Lamp as the Goldsmiths use to folder with, or by a clear Charcoal-Fire, and with a pair of Pincers (being also red hot) nip it up so close, that no Air can pass in or out.

There are many other *Lutes*, but these are sufficient to carry on any Chymical Operation.

Of the Degrees of Fire.

THE several Heats requir'd in Chymical Operations, are as follow; viz.

Balneum Maria, is warm or hot Water. *Balneum Vaporosum*, is the Steam or Vapour of Water. The *Heat of Ashes* is made in sifted Ashes, and the *Sand-Heat* in sifted Sand. There is also a *Heat of Filings of Iron*, a *Reverberating Heat*, or naked Fire; and lastly, a *Melting Fire*. The *Water, Ashes, Sand, and*

Filings of Iron, are contain'd in proper Vessels, made of Copper or Iron, and placed in Furnaces. The *Reverberating* or *open Fire*, is made in the Furnace we call a *Reverberatory*, or open Furnace.

All these *Heats* have their *First*, *Second*, *Third*, and *Fourth Degrees of Fire*.

The *First Degree*, is a handful of Smal-coal, or three or four Charcoals, of the thickness of a Man's finger, well kindled.

The *Second Degree*, is six or seven such Charcoals kindled.

The *Third Degree*, is such a one as will make the Fire place of the Furnace of a Worm red.

The *Fourth Degree*, is such as will cause the Fire-place of the Furnace to be of a white Heat, or the most extream Fire you can make.

Of *Dry Heats*, *Asbes* is weakest, *Sand* stronger than *Asbes*, and *Filings of Iron* stronger than *Sand*.

Of such Terms as are used in Chymistry.

A *Malgama* is to mix *Mercury* with *Gold*, *Silver*, *Lead*, or *Tin*, which is to be done thus ; First

First, melt the *Gold, Silver, or Lead, &c.* so that it may but just flow, then heat the *Mercury* till it begins to fume; and by little and little, pour the *Mercury* to the melted Metal, and stir them about with a warm Iron Rod, 'till they are Incorporated: If you would make the *Amalgama* so hard as to beat into a Powder, you must take three parts of the hard Metal, to two parts of *Mercury*: If you would have it so soft as to spread, you must take two or three parts of *Mercury*, to one part of the hard Metal.

Alcohol is to reduce any Substantial Matter into an Impalpable Powder; also, very high Rectified Spirit of Wine, is call'd *Alcohol*.

Cement, is to stratifie Lamels of Gold with a Paste, made of one part of Sal Armoniac, two parts common Salt, and four parts Tobacco-Pipe Clay, or Tobacco-Pipes beaten to Powder, moistened with a sufficient quantity of Urin: This is called the Royal Cement.

Coagulate, is by evaporating Liquids, or by mixing Fluids of differing Qualities to cause a more solid Mass.

Circulation, is a Motion given to Liquors, contained in a double Vessel, or Circulating Glass, excited by Heat to Ascend and Descend.

Cohobate, is to return the Liquor which has been Destilled, upon the Matter remaining in the Vessel, after Destillation.

Congéal, is to let a Metal, Wax, or Fat, which is melted, to fix, or cool, when taken from the Fire.

Detonation, is a Noise that is made when the Sulphureous Parts of any Mixture, rush forth with Impetuosity; it's also call'd *Fulmination*.

Digestion, is some Matter put into a Menstruum, to infuse in a gentle Heat.

Destillation per Ascensum, is when the Fire is to be made under that which is to be Destilled.

Destillation per Descensum, is when the Matter which is to be Destilled, is placed under the Fire, by which the Spirits are Precipitated and Forc'd downwards.

Dissolution, is to reduce any hard Body into a Liquor, by the help of a proper Menstruum.

Edulcorate, is to sweeten, or make insipid, some Matter which is Impregnated with Salts, by washing it with Destilled, or Fountain-Water.

Effervescency, is the Ebullition of a Liquor; or when two Liquors of a contrary Nature are put together, which

which cause Ebullition without separating the parts.

Fermentation, is an Ebullition raised by Spirits that endeavour to separate themselves from the Body, but meeting with Earthy Parts that oppose their Passage, they swell, and rarifie the Liquor 'till they find their way out: In this Separation of Parts, the Spirits divide in such a manner, as to make the Matter of another Nature than it was before.

Filtration, is to purifie a Liquor by passing it through a brown Paper; or lay stripes of Cotton or Wollen in the Vessel (which contains the foul Water) to the middle of the Stripes, the other Ends hanging over the Vessel, which receives the filtred Liquor.

Fumigation, is to make one thing receive the Fume of another.

Granulation, is to pour a melted Metal through a new Birch Broom, or Brass or Iron Cullender, into cold Water,

Levigation, is to grind any hard Matter into an impalpable Powder upon a Marble.

Menstruum, is any Liquor capable of dissolving Metals, Minerals, Gums, or any other hard Substance into a Liquor.

Mortification, is to change the outward Form of a Mixture, as *Mercury*, &c. Also Spirits being mixt with other things which deprive them of their Strength.

Putrefaction, is the Corruption of any mixt Body, whether by the Air, or other Mixtures, and which always emits a Smell different from the Body before it was corrupted.

Projection, is to put into a hot Crucible, by little and little, any Matter. Also to put a small quantity of something, to a greater quantity of a Metal, to meliorate the Metal.

Rectification, is to Destil Spirits after their first Destillation, in order to separate from them such Heterogenous Matters as have risen with them in their first Destillation.

Reverberation, is to make the Flames of the Fire beat upon the Matter which is Reverberated.

Revivification, is to reduce any Preparation of *Mercury* into its Form again.

Sublimation, is to elevate any Volatile Matter, into the upper part of such Vessels as contain them, by heat of Fire.

Stratification, is to lay two different things, bed upon bed, or lay upon lay, one over another.

Preci-

Precipitation, is to make any Matter dissolved, fall to the bottom of the Vessel, by putting something into the Dissolution, which is more agreeable to the Menstruum.

The Principles of Minerals in the Mines.

(Not to say any thing of the Universal first Matter of Things, not Specificate) are *Argentum Vivum*, and *Sulphur*; out of these two are all Generated. All *Mercurial Minerals*, of which there are divers Species, by the Endeavours of Nature, tend to the Perfection of *Gold*, but by different Accidents are hinder'd, or at least retarded, in their attaining to the intended Perfection; for according to the Purity, or Impurity of these Two, are different Metals produced.

C H A P. I.

Of GOLD.

GOLD, the purest of all Metals, is by Nature generated of a most pure fixed *Mercury*, and a small quantity of clean fix'd *Sulphur*, of most pure Redness, which tingeth the *Mercury*: that it is most *Mercurial*, appears by its easie

easie Conjunction with, and Reception of pure *Mercury*; that this *Mercury* is fixed, and clear from all Operations upon it by Fire; that the Sulphur of it is tinging, is manifest by this, That joined rightly with pure *Mercury*, it transforms, or changes its Colour into a most pure Red.

It is a most Noble Subject for Medicine, in the Hands of an Expert Artift: witness Dr. *Anthony's Aurum Potabile*.

Purification of Gold.

Put one Ounce of *Gold* into a Crucible; when it is red hot, put to it Reg. Antimony three Ounces; let them melt together in a strong Fire, 'till little Sparkles fly about in the Crucible, then cast out the Golden Reg. into a little Cone, or let it stand in the Crucible till it is cold; then beat off the Scoria, and put the Reg. into a Crucible, and set it again in the Furnace to melt; when it is in Fusion, cast upon it two Drams of Salt Petre, and a quarter of an hour after that, cast two Drams more of Salt Petre, and so do the third time, still keeping it melting, till you perceive it emits no Fumes, then pour it into an Ingot, and beat the Scoria off from the Gold. It is then perfectly fine, and fit for any Operation, There

There are other Purifications of *Gold*, viz. per Cupel, Cement, &c. but this is the best.

Amalgamation of Gold.

Take of fine *Gold* half an Ounce, beat it into thin Plates, heat them red hot in a Crucible, put to it of clean *Mercury* (first made hot in a Crucible) two Ounces, and stir them about together with a hot Iron Rod till they grow cool; then wash them in a Stone Mortar, with clean Salt and warm Water, till the *Amalgama* will emit no blackness; this done, it is pure: But if it be too soft for your Purpose, you may squeeze some *Mercury* from it, through a Diaper Cloth.

If you would reduce the *Gold* into an Impalpable Powder, put the *Amalgama* into an unglaz'd Dish or Poringer, place it over a gentle Fire, and the *Mercury* will ascend in a Fume, and leave the *Gold* in an Impalpable Powder.

Aurum Fulminans.

Take what quantity of *Gold* you please, in thin Plates, File-dust, or
small

small Granules, put it in a separating Glafs, or any other convenient one; pour upon it, by a little at a time, four times its quantity of *Aqua Regis*, or Spirit of Nitre, Bezoardick; place the Glafs on warm Sand, and let it there continue till all the *Gold* is dissolved; then put the Dissolution into five or six times its weight of clean Water, mix them well by shaking, then drop to the Solution Oil of Tartar, *per deliquiem*, or Spirit of Sal Armoniac, made with Salt of Tartar, or Pot-Ashes, till the E-bullition is over, then let it stand ten or twelve Hours, for the *Gold* to precipitate, and then pour off the Water by gentle Inclination; wash it with several clean Waters, till the Golden Calx is insipid; dry it in a gentle Heat, between clean Paper, and keep for use.

Its Operation is Diaphoretick.

Its Dose from five to twenty five Gr. given in Pestilential Fevers, and Small-Pox, with good Success; and is often given to those who have too much *Mercury* in them.

N. B. That you be careful in drying of it, lest it take fire.

Aurum

*Aurum Potabile, as I prepared it for
the Chief Physician of a Great
Prince, 1692.*

I Dissolved four Ounces of Gold (purified as before) in one Pound of Bezoart. Spirit of Nitre, and drew the Spirit from the Gold in a Heat of Sand, return'd the same Spirit upon the Gold, and Destill'd it off again. I made the second Cohobation with the same Spirit, as also the third, fourth and fifth Cohobation, with one Pound of New Spirit of Nitre Bezoart. And likewise the sixth, seventh and eighth Cohobation, with one Pound more of new Bezoart. Spirit of Nitre.

Whilst I was doing this, I made the Oil of the Chalk thus; I took half a Pound of clean Chalk, scrap'd it, and dry'd it before the Fire in an Earthen Dish, then put it into a Cucurbit, and pour'd upon it, by little and little, one Pound and half of Spirit of Nitre, which dissolved the greater part of the Chalk.

I filtered the Dissolution, put it into a Retort, and Destill'd it in Sand; that which Destill'd from it came off almost Insipid; I dissolv'd that which remain'd in the
Re-

Retort, in part of the Flegm which I drew off from it; it left new Feces; I filter'd the Dissolution again, and exciccated, as before; I dissolv'd it again in the Flegm which came off, it then totally dissolv'd, without any Feces; I exciccated it again, and mix'd of it and the aforesaid Calx of Gold, *ana*, and ground them extreemly well together in a clean Marble Mortar, with a Glass Pebble.

I then divided the whole Matter into equal Parts, and with one part I ground double its weight of purified Salt Petre, and with the other part treble its weight of Sal Armoniac sublimed twice, and its weight of *Stellate Regulus Martis*, in subtil Powder; each Parcel being well mixt by a long trituration; I put this Mixture in a Retort; placed it in a Sand Furnace, made gradual fire under it for eight Hours, and kept it two Hours longer in the most extreem degree of fire; the Sal Armoniac rose into the neck of the Retort, so much Impregnated with the Sulphur of Gold, that it was as red Blood.

The other Mixture of Golden Calk and Nitre, I put into a red hot Crucible,

ble, by a quarter of a Spoonful at a time, ceasing one minute between each Projection; when all was in, I gave it a strong melting fire for three Hours, and before it was cold, made it into Powder in a clean, warm, Iron Mortar, and put it presently into a clean Cucurbit, and put so much highly rectified Tartariz'd Spirit of Wine upon it, as to appear four fingers above the Mixture, then inverted another Glass into the mouth of the Cucurbit, to make it a Circulating Vessel, and let it stand in a simmering Heat for twenty four Hours, in which time the Spirit of Wine was well tinged, I decanted it, and put on more Spirit of Wine, and let it stand twenty four Hours in the same manner as before, and did so the third time, but then it took but little Tincture.

I order'd the sublimed and impregnated Sal Armoniac, with Spirit of Wine, as I did the other; I put the Tinctures of each parcel apart into Cucurbits, adapted Heads and Receivers to them, and in a gentle Heat drew off the Spirit of Wine, not leaving above eight Ounces in each Glass, both the Tinctures were deeply tinged, of which I gave a part to the Gentleman that employ'd

employ'd me, who seem'd to receive them with great Satisfaction, and gratify'd me Generously.

The Operation of both the Tinctures is Diaphoretick, and esteem'd great Cordials.

Their Dose from five to twenty five or thirty Drops, in a Glas of *Spanish* or *French* Wine, or any other Vehicle, even to Water.

They are good in *Cachexies*, *Consumptions*, all sorts of *Fevers*, and to such whose Bodies have been over-charg'd with *Mercurials*.

N. B. The several Cohobations are to subtilize the *Gold*; the Calcin'd and Purify'd *Chalk* is mixt with it for a Bole, which by that Purification is subtiliz'd sufficiently to mix with the minute Particles of the *Gold*, the better to make it give forth its *Sulphur* to the *Menstruum*. In its Fusion with the *Salt-Petre*, it emits its pure *Sulphur* into the *Nitre*, the more gross part falling to the bottom in a *Regulus*.

Its being projected into the Crucible in so little a quantity of time, and so leisurely, is to prevent its boiling over, which

which it would do by too hasty Projections.

Its being mixt with clean *Sal Armoniac*, is to cause its pure *Sulphur* to sublime, it being the Nature of *Sal Armoniac* to carry up Metallick Sulphurs.

The Tinctures are taken each by themselves, that the Physician may use them alone, or mixt, as he pleases.

When we reduced the *Gold*, we had three Ounces, three Drams, two Scruples, and five Grains, of a little paler Colour than it was at our first Dissolution of it.

CHAP. II.

Of SILVER.

SILVER, or *Luna*, is generated or produced by Nature, of pure *Mercury*, and a pure, clean and fixed white Sulphur, but comes not yet up to the Purity and Fixation of *Gold*; as is evident by its Diminution in the Fire,

Vid. Dr Brown's (the late very worthy President of the College of Physicians London) Acc. of the Sil. Mines at Friburg p. 169, 170, of his Travels, as yels.

as also of its Sulphur, which is neither fully fixt, nor incombustible. But tho its Sulphur, compar'd with that of Gold, cannot properly be said to be fixt, yet with respect to other Metals, it may be call'd fixt and incombustible.

Preparations of SILVER.

Purification by the Cupel.

SET a Cupel, made of Bone-Ashes, in a Melting Furnace; make a gradual fire to it, till the Cupel is red hot; and to every Ounce of Silver you design to purifie, put four Ounces of Lead. When it is melted, (or you may put them in together) put in your Silver to the middle of the Test, keeping still a good Fire about it (under a Muffle) till you see the Silver lie like a Polish'd Lump in the middle of the Test. Then let it cool, and beat it from the Test, and it is perfect, fine, and fit for any Physical Preparation.

The Dissolution, and Chrystals of Silver.

TAKE of the Cupel'd Silver, what quantity you please, put it into a Separating Glas, or Cucurbit, and put

put to it four times its weight of good *Aqua Fortis*; set them in Sand, over a gentle Fire, till the Silver is dissolved, then Evaporate two Thirds of the Liquor, and set it in a cold place to shoot into Chrystals.

The Infernal Stone, or Silver Caustick.

TAKE of the Chrystals of Silver one Ounce, put them into a Crucible which is capable of containing five or six times their quantity, by reason they are apt to boil and swell: You must give a very gentle Heat till the Ebullition is over, then increase the Fire a little, till the Silver sinks, and flows like Oil, and cast it into a warm greas'd Ingot Mould: keep it in a Box, with some Cotton, in a dry place.

The Silver Pill.

DISSOLVE one Ounce of Refin'd Silver in three Ounces of Spirit of Nitre, in a Matras; Destil off all the Spirit of Nitre to dryness, then dissolve the Matter remaining, in as much Rose-water as it requires; Filter and Evaporate again to dryness. Then take two Ounces of Refined Sal Prunella,

and grind it well with the Lunar Calx, in a Marble Mortar, with a Glass Pestle, and put to it again as much Rose-water, as is fit to dissolve it; Filter and Evaporate again to dryness. When it is cold, put it again into a Marble Mortar, and add two Ounces of the finest Wheat-Flower; grind them well together, with a sufficient quantity of Rose-water, to make them into Pills, of the bigness of a small Pea; when the Pills are form'd, dry them between two Papers, and keep in a wooden Box for Use.

Their *Operation* is Cathartic, and Diuretic.

They are given in all Distempers of the Head; and very successfully in Dropsies.

Their *Dose* is from half a Pill, to one Pill and an half, or two Pills.

The Precipitation, and Tincture of Silver.

Dissolve one Ounce of fine Silver, in three Ounces of Spirit of Nitre, in a Glass Vessel, plac'd upon warm Sand; when it is dissolved, put it

it into sixteen Ounces of Filtred Brine : The Silver will precipitate in a white Powder ; let it stand two Hours to settle, then pour off the Water by Inclination ; wash the Lunar Calx with warm Fountain Water, till it is insipid ; then dry it upon clean Paper ; when it is dry, put it into a Matrafs, and pour upon it twelve Ounces of Spirit of Wine, to which put half an Ounce of Volatile Salt of Urine ; stop the Matrafs with another Glass, fitting its Mouth ; Lute the Joynt with Bladder dipt in the white of an Egg, beaten well with a little Water, then set it in a gentle Heat twelve or fifteen Days, shaking it about once in twenty four Hours ; in which time it will have acquired a Sky-coloured Tincture : When cold, un-lute the Glass, filter the Tincture, and keep for Use.

Its *Operation* is Diaphoretic, and Diuretic. It is given in *Apoplexies, Epilepsies, Palsies*, and all Distempers of the Head.

Its *Dose* is from five to twenty five, or thirty Drops, in any proper Vehicle.

The Calx remaining in the Cucurbit, may be reduced into Silver again, by mixing it with equal its weight of

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Char-

Charcoal Dust, and a fourth of its weight of Borax, giving them a good Fluxing Fire in a Crucible.

Diana's, or the Philosophical Silver Tree.

Dissolve one Ounce of fine Silver, in three Ounces of Rectified Spirit of Nitre; pour the Dissolution into a Matraass, in which there is a Pint of clean Fountain-Water, and two Ounces of clean Crude *Mercury*; let the Matraass be no bigger than to contain this quantity; cover it loosely with some Glass, to keep out the dust, and set it by in some place where it may not be mov'd for five or six Weeks; in which time you will see a Representation of a Tree, spreading forth its Branches, with little knobs at their ends, resembling Fruit.

Another Curiosity of this Nature may be perform'd, with a Dissolution of Silver in Spirit of Nitre, and Destill'd Vinegar; but neither of them being of any other Use, this will be sufficient at this time.

Observati-

Observations.

Make all the Dissolutions of Silver, ^{Dissoluti-}
or any other Metal, or Mine-^{on.}
ral, with *Aqua Fortis*, in a Chimney,
to avoid the Nitrous Fumes which are
hurtful to the Head.

Lead is made use of to Separate such ^{Purifica-}
base Metals, as Superficially adhere to^{tion.}
the Silver. For being full of Sulphure-
ous Parts, it readily absorbs, and sucks
up the base Metals, which also abound
with foul Sulphurs, and will not per-
mit them to enter the close Pores of the
Silver.

The Test is made of Bone-Ashes, be- ^{The Test.}
cause these Ashes contain no fix'd Salt;
and therefore is Porous enough to suck
in the Lead, with the baser Metals,
which adhered to the Superficies of the
Silver.

The Chrystals, or Vitriol of Silver, ^{Chrystal.}
receive their Cathartic Quality from
the Purify'd Sal Prunella, with which
they are mix'd. For the sharp Points
of the Spirit of Nitre, which adhere to
the Lunar Chrystals, are blunted by
the Sal Prunella, which makes them
slide through the Bowels, which other-
wise would Corrode them, and be as

firey a Caustic, as the Infernal Stone.

Precipit.

The Precipitated *Silver* cannot be totally Separated from the Nitrous Spirits by washing, therefore the Tincture is not (as some fancy) the pure Sulphur of *Silver* Separated from its Terrestrious and Saline Parts, by the Spirit of Wine, and Salt of Urine; but it is part of the Lunar Calx, dissolv'd by the Spirit of Nitre, which sticks to the Particles of the Calx, and so Communicates that Sky-colour to the Menstruum; for I have more than once Reduced that Tincture into Malleable Silver.

Diana's Tree.

The Philosophical Tree is a ChrySTALLIZATION of the dissolved Metals, which in five or six Weeks time will appear of different Forms, according as the quantity of Water, and Capaciousness of the Vessel which contains it. For, if there be too little Water, it will be a confus'd Lump of Chrystals; if too much, it will fall into a Precipitate.

The Dissolution of *Silver* is several ways Precipitated (viz.) by a Lixivious, Urinous, or common Salt, and by Plates of Copper. And again, Copper will be Precipitated by Iron; and that again by *Lapis Calaminaris*; and the *Lapis Calaminaris* will be precipitated by a Lixivium of fix'd Nitre, or Salt of Tartar;

Tartar; and that Lixivium, by Evaporation, will become common Salt-Peter again.

C H A P. III.

of T I N.

T I N is a soft Metal, of a shining blue Colour containing a Mercury, something purer than other Ignoble Metals. It is more Soft and Volatile than Copper or Steel; more fix'd than Lead, and more crude than Silver. All its Preparations are accounted Specific, for Diseases of the Liver and Matrix.

Purgation of Tin.

P U T what quantity of Tin you please into a little Pan of Iron; set it over the Fire, and when it begins to melt, put to it some Hog's Lard, Wax, or Honey, stir them about with a wooden, or Iron Spatula, and then cast them into hot Water; Repeat this two or three times, by which the Tin will be cleansed from some of its foul Sulphur,
and

and made more bright and hard than it was before.

To reduce Tin into a Powder.

MELT half a Pound in a Crucible, and pour it into a round wooden Box, cover it close, and shake it about till it is cold; some part of it will be in a grey Powder, that Part which remains in Solid Metal melt again, and put it in the Box, shaking it as before. Repeat the same Operation, till you have as much of the Tin Pulveris'd as you desire.

Amalgamation of Tin.

MELT what quantity of Tin you please in a Crucible; put the same quantity of *Mercury* into another Crucible; let the *Mercury* stand in the Fire, till it begins to Crackle and Fume; then pour it out to the melted Tin, and stir them about with a small Iron Rod, till they are cold, If you would have the *Amalgama* so hard as to beat into Powder, one Part of *Mercury* will be enough for two Parts of Tin; but if you wou'd have it soft, you may put two Parts of *Mercury* to one Part of Tin.

Cal-

Calcination of Tin.

PUT what quantity you please of Tin into an Iron Dripping-Pan, place it in a Reverberating Oven, and make such a Fire, as to keep it melting red hot, every now and then stirring of it with an Iron Spatula, full of Holes, the better to break the Tin, and forward its Calcination; this you may continue till you have a sufficient quantity for your use.

Salt of Tin.

TAKE what quantity you please of the aforesaid Calcin'd Tin, and Reverberate it yet two or three Hours longer, stirring it all the time, till it becomes more white than it was in the first Calcination; then put it into a Pewter, or Glass Vessel, and to each Pound of the Calx of Tin, put ten Pound of Destill'd Vinegar; let them stand (now and then stirring them about) in a small Heat of Sand, till the Vinegar has acquired a sweet Taste; then Decant, and Filter the Liquor, and set it to Evaporate in a Pewter Bason, and when you see a Film appear upon the Surface

Surface of the Liquor, pour it into a Glafs Funnel (the Hole of it being stoppt with a Cork) and set it in a cool place to shoot into Salt; you may Evaporate and Chryftalize the remaining Liquor after the same manner.

Sublimation of Tin.

MIX one Part of Tin with two Parts of clean Sal Armoniac; both being made into fine Powder, and well mix'd, put them into an Earthen Cucurbit, which will endure the Fire; but above two Thirds must remain empty: Place it upon an Iron Bar, in an open Furnace, which must be set nine or ten Inches above the Grate: and a third part of the Cucurbit remain above the top of the Furnace: Inclose the lower part of the Cucurbit with Tiles and Lute, leaving three or four Registers at an equal Distance one from another, to give Air to the Fire; then fit to the Mouth of the Cucurbit, two or three Aludels, and a blind Head; Lute them, and kindle the Fire, and increase it gradually, till the lower part of the Pot is red hot, in which state keep it, till you perceive the Aludels and Head cool; then Unlute the Aludels carefully, with-
out

out shaking, and wipe off the Sublimate which adheres to them, and also that which sticks to the upper part of the Cucurbit.

The Magistery of Tin.

Dissolve the afore-said Sublimate in clean warm Water; filter the Dissolution, and precipitate it with Spirit of Sal Armoniac, or Oil of Tartar, *per deliquium*. The Precipitate will be very white, which must be wash'd with severall Waters, till the Calx is insipid; then dry it gently between Papers, and put it up for use.

It is a good Fucus, and us'd in Pomatums, or Washes.

Flowers of Tin.

TAke one part of the Powder of Tin, and two parts of Salt-Peter; mix them very well; then have ready an unglas'd Cucurbit, with a Hole in its middle, by which the Mixture must be Projected: Let the Furnace be of a fit proportion, so that there may be two Inches clear between the Pot, and sides of the Furnace. Place it upon an Iron Bar, six or seven Inches distant from

from the Grate; fit it in with Tiles, and Lute, as you did in the Sublimation; have also a Stopple fitted to the Hole in the middle of the Pot. When the Pot is fitted into the Furnace, fit to it (and Lute the Joints well) three or four Aludels, and to the uppermost, a Head with a Beak, to which a Receiver must be fitted. Kindle the Fire, and when the bottom of the Pot is red hot, cast about half an Ounce of the Mixture into the Hole, which presently must be stoppt; a Detonation will follow; when it is over, project another half Ounce, and so continue (still keeping up the Fire) till all the Mixture is in; then let all cool, and Unlute the Vessels carefully, and wipe off the Flowers upon clean Paper; put them in a clean Vessel, and wash them with Fountain Water till they are tasteless; dry them gently between Paper; when dry, put them up in a Vial for use. They are very white, and serve for the same use with the former.

In the Receiver you will find a Nitrous Spirit; and in the bottom of the Pot you will have a hard Lump, which is the grosser part of the Tin, and fix'd Nitre: By boiling, or steeping of it in warm Water, you will have the Water Im;

Impregnated with the Salt-Peter, which you may Evaporate to Dryness, or cause it to dissolve *per deliquium*.

The Jovial Calx being wash'd sweet, and dried, serves to be used in Desiccative Unguents.

Some there are who pretend to order the Flowers, and fix'd Powder of Tin, so as to whiten Copper.

The Gummy Smoaking Oil of TIN.

TAKE one part of Powder of Tin, and three parts of *Mercury Sublimata*, mix them quickly, and put them in a Retort; place it in Sand, and Lute a large Receiver to it; give it a gentle Fire: which will bring over a Smoaking Spirit, when those Fumes decrease: augment the Fire a little, and a Butter, or Gum will ascend into the Neck of the Retort; at last let the Fire be increased two or three Hours, to the fourth Degree, and Crude *Mercury* will ascend with a good part of the Tin, in grey Flowers; separate the *Mercury*, and put all the rest of that which is Sublimed, in a Tin Pan, to dissolve in the Air, into an Oil, *per deliquium*.

Aurum

Aurum Mosaicum.

TAKE of Mercury, Tin, Sal Armoniac, and Flowers of Sulphur, *Ana* four Ounces; Let them all be made clean, and grind them in a Marble Mortar, till they are perfectly mix'd: Then put them into a Bolt Head, set it in a Sand Furnace; give it gradual Fire, to the third Degree; in which keep it two Hours; then increase the Fire to the fourth Degree, and keep it so for one Hour longer: When all is cold, break the Glass; you will find a dirty Sublimate, which put away, and the *Aurum Mosaicum* will remain in the bottom of the Matrafs. You must Amalgamate the Tin and Mercury to grind with the Sulphur and Sal Armoniac.

Its Operation is Diaphoretic; and is Administred against *Hypochondriac* Distempers, *Fits of the Mother*, and the *Venerreal Pox*.

Its Dose from ten Grains, to one Scruple.

Observations,

Observations.

IT is poured into hot Water, the better to separate the Fat from it, which you mix with it in its Purification. Purification.

The Amalgama of Tin and Mercury ought to be wash'd in several Waters warmed, to take away its Blackness. Amalgamation.

If you design to make Salt of the Calcin'd Tin, you must put it into an Iron flat Pan, and Reverberate it two or three Hours longer, till it inclines to a whitish grey Colour. Salt.

In its Sublimation you ought to take care that the Sal Armoniac be clean, otherways some Particles of Dirt, which has accidentally adher'd to the Sal Armoniac, may discolour the Flowers. Sublimation.

In the Precipitation of its Magistery, you may use Spirit of Sal Armoniac, or Ol. Tart. *per deliquium*, indifferently; for they both being Alkalies, weaken the Acid Spirit in the Sublimate, so that it lets fall the Tin which was dissolved by it. Precipitation.

In the Sublimation of its Flowers I have sometimes us'd one Part and a half of Salt Petre, to one part of Tin, and sometimes three Parts of Nitre, to one of Tin; but I find by Experience,

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two

two Parts of Nitre, to one Part of Tin, to be the best Proportion ; for if there be too much Nitre, there wants Sulphur to give Flagration, to raise the Flowers ; and if there be too little Nitre, there will not be of the Nitrous Spirit sufficient to raise them. Also Note, That where the Powder of Tin is to be used, it is indifferent whether it be that made by shaking in a Box, or a hard Amalgamation beaten to Powder, or fine Filings of Tin.

Smoaking Spirit.

In your Mixture of Tin and Mercury Sublimate, for the Smoaking Spirit, you must immediately put them into the Retort, otherways they will attract Air, and grow Clammy, and be troublesome to put in.

Aurum Mosaicum.

Its Stench is very Offensive, but not Pernicious ; To avoid the Offence, set it to work in a Chimney ; The Degrees of Fire is the greatest Secret in the making this Medicine, which observe thus ; Keep it in the first Degree one Hour ; in the Second Degree two Hours ; in the Third Degree two Hours ; and in the Fourth Degree one Hour.

There is also a Magistery of Tin, made by dissolving it in Aqua Regis ; Pour four Ounces of the Dissolution, into half a Pound of clean Water, it will immediately

diately turn white ; Let it be in a Vessel which will contain three or four Pints ; Then put to it (gradually) so much Spirit of Sal Armoniac, till the Ebullition ceases ; a white curdly Matter will Precipitate ; wash that Precipitate with clean Water, till all its Acrimony is gone, and dry it gently ; This Magistery will more readily dissolve in Destill'd Vinegar, and make a better Salt of Tin, than that Calx made by Calcination.

The Aqua Regis is made of three Parts Spirit of Nitre, and one Part of Sublimed Sal Armoniac.

CHAP. IV.

Of Lead, or Saturn.

LEAD, or *Saturn*, is a foul Metallic Body, and Imperfect, Composed of an Argent Vive impure, not fixed, and feculent, some-what white outwardly, but inwardly red, and of a Sulphur in part combustible ; it wants Purity, Fixation, Colour, and Ignition, yielding to an Expert Physician Excellent Medicines.

D 2

Purification

Purification of Lead.

IT is Purify'd, by melting with Honey, Wax, or Fat, and pouring them into hot Water, in the same manner as you do Tin.

Calcination of Lead.

IT is Calcin'd in an Iron Pan, being kept red hot, and stirring with an Iron Spatula, after the same manner as you did Tin, till it comes into an Ash-colour'd Calx. This Ashy Calx being put to Reverberate three or four Hours longer, becomes Red, and is call'd *Red Lead*, or *Minium*. The *White Lead*, or *Ceruse*, is made of Plates of Lead, by the Steam of *Vinegar*, after this manner: They put into a Glaz'd Earthen Pot, Plates of Lead, so that they may lye hollow, either by hanging them upon a Wire, or otherways, and setting them in a Bed of *Horfe-dung* (with a sufficient quantity of *Vinegar* in the Pot) for three Weeks, or a Month's time. When they are taken out, beat off what is Calcin'd, and put the rest into the Pots again with *New Vinegar*, and order them as before, till all is brought into

into *Ceruse*. *Lead* is also *Calcin'd* by Spirit of Nitre, Aqua Fortis, Aqua Regis, Spirit of Salt, or any other Corrosive.

Litharge is made by the *Refiners*, when they Refine great quantities of *Silver*; that which is of a Pale Colour, they call *Litharge of Silver*, and that of Yellow or Red, *Litharge of Gold*. And these have their Colour according to the Degrees of Fire they have pass'd.

Burnt Lead, or *Plumbum Ustum*, is made by mixing two Parts Lead, and one Part Sulphur (the Lead in Filings, and Sulphur in Powder) put into a Pot, and set in a Fire to burn, as long as any Combustible Sulphur is left.

Sugar of Lead.

TAKE of *Litharge*, red or white Lead, what quantity you please, Powder it, and put it into a Pewter, Glass or Earthen Vessel, and put to it eight times its weight of Distill'd Vinegar: An Ebullition will appear upon their Mixture: Stir them well about; then set them upon a digesting Furnace in Sand; Let them stand in Warmth

D 3

three

three or four Days, two or three times in a Day stirring them well with a clean Stick ; when the Vinegar has acquir'd a Sweetness , pour off the Impregnated Vinegar by gentle Inclination, and filter it ; then put it to Evaporate in a Pewter Bason, till a Film appears upon the Surface of the Liquor. ; Then put it into a Glass Funnel (the small End being stoppt with a Cork) and set it in a cool place to shoot : When it has stood so twenty four Hours, pull out the Cork, and let the Liquor, which is not Coagulated, run from the Sugar of Lead.

This Liquor is called *Honey of Lead*, which you may make into Sugar, by Evaporation and Chrystallization ; or keep to make the Balsam or Magistery, as followeth.

Drop Oil of Tartar, by Dissolution, into the Honey of Lead, and a white Powder will fall to the bottom ; which Powder must be wash'd sweet, and kept for Use ; which is the same with Magistery of Tin.

The Balsam or Butter of Lead, is made by mixing the Honey of Lead with its equal Weight of Salad Oil ; Beat them

them well together, till they are united in the Consistence of a Balsam.

It is used in Scalds and Burns.

The Use of the Sugar of Lead is now universally known. Its Dose internally to half a Scruple.

*The Balsam of Lead, with Oil
of Turpentine.*

PUT what Quantity of Sugar of Lead you please into a Matrass; Put upon it four times (some say three times) its weight of Oil of Turpentine: Let them stand in a gentle Heat of Digestion, forty eight Hours, shaking them about three or four times a Day: In that time the Oil will be well tinged; Pour it off from what remains undissolved, by gentle Inclination; Put the Impregnated Oil of Turpentine into a Retort, and draw two Thirds off in a gentle Heat of Sand; that which remains in the Retort, is the Balsam, which keep in a Vial well stoppt, for Use.

It is accounted an Excellent Medicine for healing and cicatrizing Ulcers. It is also used with good Success in Cancers, they being touch'd with it once in twelve Hours.

The Burning Spirit of Lead.

MIX what Quantity of Sugar of Lead you please, with three times its weight of Fuller's Earth, Powder of Bricks, or Tobacco-Pipes clean burnt, and beaten to Powder ; Put them into a coated Retort, of which one third must be empty ; Place it in an open Furnace, fit a Receiver to it without Luting, and make a very gentle Fire under it, to draw off the Phlegm : When the Drops begin to taste, Lute well the Joints of the Receiver, and increase the Fire a little, till whitish Clouds come into it, and as you find the Fumes to abate, increase the Fire to the most Extream Degree, till no more Fumes appear in the Receiver : Then take off the Receiver, and put all the Liquor into a clean Retort, or a Body with its Head placed in Sand. Lute the Joints well,

well, and make under it a gentle Fire, which will drive over its ardent Spirit, in an imperceptible subtile Vapour; After that will rise a Liquor (a little ting'd) which some call *The Yellow Oil of Saturn*, and will appear in little oblique Veins: After that the Phlegm will rise in strait Veins, and in the bottom will remain that which is call'd the *Red Oil of Saturn*. These Substances ought to be separated by changing the Receiver in the Rectification.

The Burning Spirit is Diaphoretic and is given in the *Plague*, *Burning Fevers*, *Small Pox*, and *Venereal Pox*, and in *Hypochondriac Melancholy*.

Its Dose is from ten, to twenty five, or thirty Drops.

Observations.

THE Pouring it into hot Water, is ^{Purification.} to Separate the Fat from it.

It gains Weight by Calcination, because a greater quantity of Igneous Particles Insinuate themselves into the Lead, than the Sulphureous ones the Fire drives out. For in Calcination, the
Acid

Acid of the Fire, joins it self to the Alkali of the Lead, and having driven away its combustible Sulphur, makes a new and incombustible Body.

White Lead also gains in its weight by the Acid Particles of Vinegar, and burnt Lead by those of Sulphur.

Salt. Any of these Saturnine Calxes will make *Salt*; but I have found the *Flake-Lead*, as they beat it off the Corroded Flakes, to serve best. You may have it at the *Colour-Shops* for 6 *d.* per *lib.*

Pewter Vessels are best both to Evaporate and Digest the Destill'd Vinegar and Lead in; Earthen Vessels suck up too much of the Liquor, and in Glass Vessels it requires more time, and they are in danger of breaking. Besides its Evaporation in a Pewter-Bason, makes it shoot better into Chrystals.

Burning Spirit. I mix Bole with the *Salt*, to keep it from melting; so it will the better emit its Spirit.

All Calxes of *Lead* may be reduced into Solid *Lead* again, by melting, with Charcoal-Dust, and Nitre.

C H A P. V.

Of I R O N.

MAR S, or *Iron*, is a foul, imperfect Metal, Generated of impure Mercury and Sulphur, full of Earth, and strongly United by the Nature of its Parts, but wanting Fusion and Weight. However, when it is well prepared, it yields many Excellent Medicines both for Internal and External Use.

Preparations of Iron.

Dr. Willis his Preparation of Steel.

TAke clean Filings of Iron, and Cream of Tartar in fine Powder, of each a like quantity; mix them well, and make them into a PASTE, with White-wine. Then set them to dry in the Sun, or other gentle Heat; break it, and if it has not acquir'd a Greenish-colour, Powder it, moisten and dry it again, as before.

CROCUS

Crocus Martis Aperiens.

TAKE Filings of *Iron*, what quantity you please, moisten them with Rain-water, and dry them in the Sun, or at a gentle Fire; when they are dry, moisten them again, and dry as before: Repeat this five or six times, and the Filings will be in a Subtile Powder, which is call'd the opening Saffron of *Mars*.

You may Expose Filings of *Iron* to the Air, where the Dew may fall upon them, and dry them, as before; this being repeated fourteen or fifteen times, the *Mars* will be converted into a Subtile Powder, which is call'd *Crocus Martis*.

Both these Powders are Opening, and given with good Success in the *Green-Sickness*, *Stoppage of Terms*, and in *Dropsies*.

Its *Dose* from five Grains, to two Scruples, or fifty Grains.

An opening Crocus with Sulphur.

THIS opening *Crocus* is Prepared with Sulphur; by mixing equal Parts of Filings of Steel, and Sulphur in Powder

Powder, and burning them in a flat-bottom'd Earthen, or Iron Pan, continually stirring them with a Spatula, till they come into a Subtle Powder, which will be black, and is *Steel Prepared* with Sulphur. This Prepared Steel being mix'd with more Sulphur, and Fir'd, as before, and continued in Agitation, will acquire a Saffron-Colour.

Its *Use* and *Dose*, as the former.

A third Aperitive Crocus Martis, is thus made.

Take the *Cap. Mort.* of *Ens Martis*, put it into a large Crucible; Set it in a Melting-Furnace, with a good Fire about it; Keep stirring till it has done Fuming.

Any of the aforesaid *Crocuses*, after being sprinkled with Vinegar, and being Reverberated three or four Hours, are accounted Binding, and are given in *Diarrhaeas*, *Spitting of Blood*, *Immoderate Hemorrhoids*, and *Terms*.

The *Dose* from fifteen Grains, to fifty, or one Dram.

Crocus

Crocus Martis Astringens.

IT is made by Reverberating Filings of Iron, in the Flame of a Wood Fire, for sixteen or twenty Hours. Some advise to stir it once in two or three Hours; but this is troublesome, and after all, it is no better than those which went before, and useful generally for the same Purposes.

Salt, or Vitriol of Steel.

TAke four Ounces of *Iron*, and sprinkle upon, or moisten them with two Ounces of Oil of Vitriol: Put them into a Matraass, and let them stand a quarter of an Hour: Then put to them twelve Ounces of Fountain-water by degrees. When all is in, set them in a gentle Heat, to stand twenty four Hours. Then decant, and filter the Liquor, which must be Evaporated in an Earthen or Glass Vessel, till you see a Scum appear; Then take it from the Fire, and if you see any Yellow Powder in the bottom of the Vessel, decant the clear Liquor from it, into a wide-mouth'd Glass, and set it in a cool place, where it may stand twenty four Hours, to shoot

shoot into Chrystals : Then pour the Liquor from the Chrystals, to be further Evaporated; and so on, till it all shoots into Chrystals.

It is used in all Diseases caused by Obstructions.

Its *Dose*, from five Grains, to a Scruple.

Salt of Steel, by the Sweet Spirit of Vitriol.

TAKE a flat Iron Pan, turn'd up at the Edges, and put into it so much *Spiritus Vitrioli Dulcis*, as will fill it two Fingers; let it stand quietly in some warm place, till it is Coagulated into a Salt; then dry it gently, and keep it in a Vial, well stop'd.

Its *Use* and *Dose* is the same with the former.

Ens Martis.

TAKE Filings of *Steel* one Pound, *Sal Armoniac* in Powder two Pounds, mix them well, and put them into a Retort, which set in a Sand Furnace, and give gradual Fire to the fourth Degree :

gree : When all is Sublimed, let out the Fire, and you will have in the Neck of the Retort, the *Sal Armoniac* Impregnated with the Sulphur of Steel.

Its *Operation* is Diuretic, and a little Diaphoretic.

It is accounted a Specific against the *Rickets* and *Worms* in Children ; also against *Hysteric Fits*, and a great Opener of *Obstructions*.

Its *Dose* from five Grains to one Scruple.

Diaphoretic Steel.

Dissolve the *Ens Martis* in a sufficient quantity of warm Water ; filter the Dissolution, and by dropping leisurely the Oil of Tartar, *per deliquium* (or Spirit of Sal Armoniac) into the filtered Liquor, a Powder will Precipitate ; Let it settle, and decant the Liquor, and dry the Precipitate.

Its *Operation* is Diaphoretic, and Diuretic, and is given to *Hypochondriacal* Persons, also in *Quartan Agues*.

Its *Dose* from ten Grains to half a Dram.

The

The Tincture of Steel.

Take that which remains in the bottom of the Retort, after the Sublimation of *Ens Martis*, Powder it whilst warm, in a warm Mortar, put it presently into a Matraass, with so much Spirit of Wine, as will cover it four Fingers high; Let it stand five or six Hours in warm Sand, and it will be tinged of a red Colour. When it is cold, decant it from the Fæces, and put it in a Glass well stoppt, for Use.

This *Tincture* is said to be a Specific against *Worms* in Children, *Cachexia* and *Dropisie*.

Its *Operation* is Diaphoretic and Diuretic.

Its *Dose* from five to fifty Drops.

That which remains after the *Tincture* is Extracted, may be Reverberated a little; and it is one of the best opening Saffrons of Steel. But the continuance of its Reverberation three or four Hours, makes it Astringent, as 'tis commonly so call'd.

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Another

*Another Tincture of Steel, and it's
Sweet Salt.*

TAKE half a Pound of Filings, without Dust, put to it one Pound and a half of Spirit of Salt: Let it stand upon warm Sand twenty four Hours; then decant and filter the Liquor: Put to the remaining *Steel*, one Pound and an half more of Spirit of Salt: Let it stand, as before, twenty four Hours; shake it two or three times a Day, and in that time the *Steel* will be almost all dissolved; decant and filter, as before; Put both the Filter'd Liquors into a Retort, which place in Sand, and draw off two Pound of the Liquor; then let the Retort cool, as soon as you can, but before 'tis quite cold, pour the Liquor from the Sediment, into a Glass, and set it to shoot in a cold place.

These Crytals will have a sweetish Taste, and by three or four Dissolutions and Coagulations in the same Liquor, they will acquire a very sensible Sweetness.

This is accounted the best Salt of *Steel*, and more successfully Answers the Intentions of all the rest, and is more Pleasant for the Patient to take. Its

Its *Dose* is the same with the other Salts.

A third Tincture of Mars.

TO make this *Tincture* you must draw the first Dissolution (made by Spirit of Salt) to dryness, or till such time the Drops which Destil from it appear Yellow ; then, to that which remains, put a Quart of Destill'd Vinegar ; and let it stand twenty four Hours in warm Sand ; in that time it will tinge ! Then take off, and Decant that Red Tincture, and put upon it more Destill'd Vinegar ; let it stand as before, and so proceed till it yields no more *Tincture* ; Destil off the Vinegar, to the Consistence of a Syrup, and put to it so much Spirit of Wine, as will cover it four Fingers ; set it in warm Sand twenty four Hours, and it will be Tinged ; Decant that Tinged Spirit, and proceed, as long as it will give any further Tincture.

When you have done, take all the tinged Spirits of Wine, and put them into a Curcubit, let it in a Heat of Ashes, and draw off all the Spirit of Wine, except sixteen or twenty Ounces, which will be a deep and clear Tincture. Put this when cold, into a Vial, well stoppt.

This far exceeds the other Tinctures, and is used in the same Cases and Dose.

The Tincture of Steel, with Tartar.

TAKE half a Pound of Rust of *Iron*, mix with it twenty Ounces of Cream of Tartar in fine Powder. Put them into an Iron Kettle, with eight or ten Pints of clean Water; set them over a Fire; cause them to Boil for eight or ten Hours, and stir them often, still supplying hot Water, as it Evaporates: Then let the Mixture settle, and whilst warm, filter it, and Evaporate to the Consistence of a thin Syrup, in an Earthen Pan.

It is a good Aperitive Medicine, and given in the same Cases the others are.

Its *Dose* from one Scruple to five, in any proper Vehicle.

The Anodine Sulphur of Steel.

TAKE of the aforesaid Tincture Extracted, with Destill'd Vinegar, and drop upon it, either Spirit of Sal Armoniac, or Ol. Tart. *per deliquium*, so long till you see nothing will Precipitate;

tate; then let it stand to settle, and Decant the Liquor, which is of no use: Pour warm Water upon this Precipitate, and when settled, shake it; Decant that Water, and put on more, and so proceed, till the Sulphur has no salt Taste; then dry it gently, and keep in a Vial, well stop't, for use.

Its Operation is Sudorific and Anodyne, and is successfully used in the Gout, Rheumatism, Scurvey, all Fevers, and the Small-Pox.

The Opening Extract of Steel.

TAKE any of the aforesaid Opening Crocus's, four Ounces, of the Juice of Apples (ordered as followeth) four Pound, put them in an Iron Pan, in a gentle Heat of Digestion in Sand, six or seven Hours; Augment the Heat in such manner, that it may Boil very gently, three or four Hours; Stir it every quarter of an Hour with an Iron Slice, and when you perceive it to be black, take it from the Fire, and let it stand to settle a little; whilst warm, pour it through a straining Cloth, and by gentle Evaporation, bring it to the Consistence of an Extract. E 3 It

It is endued with the same Vertues
other Opening Chalybeats are.

Its Dose is from half a Scruple, to two,
or one Drachm.

You must put half a Pound of Tame,
rinds bruised, to four Pound of the
Juice of Apples, and mix them well in
an Iron Mortar: Let them stand twenty
four Hours, in a gentle Heat of
Sand, then strain it through a Cloth
for the use abovesaid,

The Binding Extract of Steel.

TAKE of the binding *Crocus Martis*,
four Ounces; Put to it of Red Port
Wine (wherein half a Pound of the Pulp
of Ripe Sloes has been mix'd and dig-
ested, as in the Opening Extract) four
Pound: Proceed in every thing as in the
other Extract, and you have that which
they call the *Binding Extract of Steel*.

It is given in *Bloody Fluxes, Looseness,*
and *Immoderate Courses,*

and when you perceive it to be
black, take it from the fire, and let it
stand to settle a while; which being
done, it is through a filtering cloth, and
The

The Martial Stiptic-Water.

TAKE of our *Lapis Medicament*: two Ounces, reduce it into a fine Powder, put it into a Matraass, pour upon it a Pint of Spring-Water; set it in a gentle Heat twenty four Hours, shake it two or three times. Decant it; to every four Ounces of this clear Infusion, add one Ounce of our *Tincture of Mars*, and keep it for use.

It Cicatrizeth without Pain; the more it is known, the more it will be used.

Tinctura Anti-Phtifica.

TAKE Salt of Steel, and *Saccharum Saturni*, of each four Ounces; put them into a Matraass with a Quart of good *French Brandy*; let it digest twenty Hours, and you will have a beautiful Tincture.

It is a Specific in *Hectic-Fevers*; and opens Obstructions in Women.

The Dose from five to fifty Drops.

The Red Flowers of Mars.

Dissolve Filings of *Steel* in Spirit of Salt, filter the Dissolution; put it into a Retort plac'd in a Sand-Furnace; draw off the Spirit till the Drops come Yellow; then change the Receiver, and encrease the Fire to the fourth degree, keep it so till the Drops cease, and no more Fumes appear in the Receiver. When all is cool, you will find a Volatile Sulphur or Flowers of *Steel* in the Neck of the Retort.

If you put half an Ounce of these Flowers into four Ounces of Spirit of Wine, you will have a clear and pleasant Tincture. The *Dose* from ten to fifty Drops.

You may keep the Flowers, if you quickly scrape them from the Neck of the Retort, and put them in a Vial, and stop it close.

Elixir Martis.

PUt four Ounces of the *Caput Mortuum* (after raising the Red Flowers of *Mars*) into a flat Pan, expose it to the Air, and it will run into a red Liquor,

quor. Take of this Liquor, of the Tinctures of Myrrh and Saffron, Tartaris'd Spirit of Wine, of each a like quantity.

Purging Salt of Mars.

TAKE Filings of Steel, *Sal Armoniac*, and Flowers of Sulphur, of each one Pound, grind them well together, and put them into a Worm-red Crucible, Spoonful after Spoonful; keep them stirring with an Iron Rod till the blue Flame disappears. With warm Water Extract the Salt from the *Crocus*, Evaporate the Water, and keep the Salt for use.

The Dose from ten Grains, to two Scruples.

Tincture of Mars with Sal Armoniac.

TAKE half a Pound (thorough dried) of the Mass that remain'd after making the Tartariz'd Martial Tincture, add to it as much Salt-Petre, and *Sal Armoniac*, and two Ounces of Flowers of Sulphur; let them be well mix'd, and powder'd, then put them gradually into a Red-hot Crucible, keep them in

a Fusion, a full Hour ; take it from the Fire, and reduce it to a fine Powder, which put quickly into a Matrafs, and pour upon it a Quart of Tartariz'd Spirit of Wine, digest it in a gentle Heat two or three Days, and Extract a Tincture.

The Use and Dose, the same with other Martial Tinctures.

Another Tincture of Mars,

TAKE half a Pound of Filings of Steel, put to it (by little and little) Spirit of Nitre four Ounces ; presently after add Oil of Vitriol, three Ounces : Stir them with an Iron Spatula, till they come to a Grey Powder ; then add (by two or three Spoonfuls at a time) twelve Ounces of Spring-water, stir it well, and put (also by degrees) into it ten Ounces of Spirit of Wine, shake the Vessel, and let it stand in digestion twenty four Hours ; and you will have a strong deep Tincture that will neither Precipitate, nor grow Muddy.

The Use the same, but the Dose something less than the former.

Note, Take care the Vessel be large enough.

Epileptic

Epileptic Spirit of Steel.

TAKE Hungarian or Roman Vitriol, French Verdegrease, clean Filings of Steel, of each one Pound, mix and powder them well; put them into a Glaz'd Earthen Pan; pour a Gallon of Hot-Water upon them, and stir them: When cold and settled Decant the Liquor: To the Matter in the Pan, put two Quarts more of Hot-Water, stir and Decant as before; put the Impregnated Waters together, and Evaporate half, then with a Lixivium of Tartar, Precipitate the Sulphur, or Oker of the Vitriol and Steel; wash it with Hot-water *f. 4.* and dry it. Put this Sulphur into a Matrafs; to each Ounce of which, add half a Pound of Sweet Spirit of Verdegrease, let it stand in digestion fifteen Days, shaking the Matrafs two or three times every Day; afterwards let it settle, and Decant it for Use.

The Dose, from five to fifty Drops.

Observa.

Observations.

Choice of
Mars.

SOME Authors are of Opinion that *Steel* is the better Subject to Work upon, and Others give the Preference to *Iron*; But I think 'tis Indifferent which we take, since *Steel* is no other than a Concentrated *Iron*; I have us'd them both very often, and never found any Difference, either in their Preparation, or Operation, only *Steel* (by Reason of its Concentration) requires a little more time for its Dissolution.

To clean
the Mars.

Always wash the *File-dust* in several Waters, to separate the Dirt, which has accidentally fallen into it; the Dirt will swim upon the Surface of the Water, and the clean Filings will sink to the bottom; they are best dried in the Sun.

Aperitive
Crochus.

Rain-water and Dew are accounted better than common Water, to moisten the Filings with, because they are Impregnated with the Nitre of the Air, which causes a better Penetration, and is more Aperitive.

In

In the Preparation of *Mars* with Sulphur, place the Vessel in a Chimney, the better to avoid those Offensive Fumes it emits. *Steel prepared with Sulphur.*

This Operation requires nothing but diligent grinding, if there be occasion to moisten it a second time. *Dr. Wil- lis his Prepar.*

Let the Dissolution of *Mars* for its Salt be always made in a Chimney, for the better Convenience of the unpleasant Sulphurous Fumes which rise from it; nor fill the Vessel in which you dissolve it, above a quarter full, lest it should boil over. *Steel.*

Some prepare this Salt with equal Parts of Oil of Vitriol, and Spirit of Wine, but the Spirit of Vitriol dulcify'd, produces a finer Salt. *Salt of Mars, with sweet Spirit of Vitriol.*

Of Sal Armoniac we take two Parts to one Part of *Mars*, the better to penetrate the Filings, and make a Separation of its Volatile Sulphur. *Ess. Mart.*

In this Precipitation of *Mars*, the Diaphoretic and Diuretic Operation proceeds from the Particles of Sal Armoniac, which are mix'd with it. Therefore

fore we do not wash this, as we do other Precipitates.

Tincture of Mars. This Tincture is also Impregnated with the Sal Armoniac, which makes it operate by Urine.

Tincture of Mars with Tartar. In this Preparation some use Crude Tartar, but I rather choose Cream of Tartar, because it's grosser and more Earthy Parts are separated, and therefore it makes the better Penetration into the Iron.

Sweet Salt of Mars. Some there are who make a Distinction of the Parts of Iron, affirming that the purer part of it dissolves first, and most easily in an Acid; but I have often try'd that Experiment, and could never find any sensible Difference, Most Corrosives are capable of dissolving the whole Body of *Mars*, but the Spirit of Salt more kindly and readily than any other.

The Tinct. of Steel, made with Spirit of Salt-De-Still'd Vin. and Spirit of Wine. This Tincture is thought to be more Penetrating and Noble than the foregoing ones, because the *Mars* is purify'd by three Dissolutions, (*viz.*) with Spirit of Salt, Destill'd Vinegar, Spirit of Wine, and in each Dissolution it leaves new Faces.

This

This is call'd, *The Anodine Sulphur of Anodine Mars*, because it gives Ease, by quiet-*Sulphur of Mars* ing the *Archaus*.

The deepest Red Wine you can get is best for this Preparation: The Astrin-*The bind- ing Ex- tract.* gent Quality of the Sloes do much in-crease the Virtue of this Medicine.

Notwithstanding all those Preparations which are commonly call'd *Apperitive*, there are some who will not allow any Preparation of *Mars* to be truly such; but that meeting with their proper Acid, in great Quantity, as in Diseases of the *Liver* and *Spleen*, they become Opening, and sometimes violently Purging.

It is made stronger or weaker by a *The Mars* greater or less quantity of Tincture of *tial Stip- tic Water.* *Mars*.

If you expose them to the Air, they will run into a Blood-red Oil. Both the *The red Flowers of Mars.* Flowers and Oil are great Stiptics.

Sweet Spirit of Verdegrease is made *Epilep. Spir. of Steel.* of equal parts of Spirit of Wine, and Spirit of Verdegrease destill'd together, as the Sweet Spirit of Nitre.

C H A P. VI.

Of COPPER.

VENUS, or Copper, is a Metal-line Body, Foul, Imperfect, and Generated of an Impure *Mercury*; Its Sulphur is Earthy, Combustible, and of an obscure Red; it wants Fixation, Purity, and Weight; but if handled by an Expert Artist, is of great use both for Internal and External Medicines.

Purification of Copper.

TAKE Plates of Copper, of the thickness of a Shilling, lay them *stratum super stratum*, with Powder of Sulphur, in a large Crucible; let the first and last Lays be Sulphur; put them in the Arch of a Glass-maker's Furnace twelve Hours; then take them out, and when they are cold, scrape off what is Calcin'd: The rest of the Plates, which the Sulphur has not penetrated, may be again stratify'd and calcin'd, as before; This Calcin'd Copper is called *Æs ustum*.

If you wou'd reduce it into *Copper* again, take the *Æs ustum*, and beat it red hot in a Crucible, and cast it into an Earthen Pan, wherein *Linseed-Oil* is; cover it presently to hinder it from flaming; Let it lie in the Oil till it is pretty cool; Then take it out and heat it red hot, and quench it as before: Do this nine or ten times, every third time putting new Oil: Then take the *Copper*, which looks very fine, and with *Charcoal-Dust*, and *Borax*, put it into a Crucible; set it in a Melting Furnace; give it a strong Fire of Fusion, till it is well melted; then cast it into an Ingot.

Another Purification of Copper.

STratifie Plates of *Copper* with Common Salt, in a Crucible, Calcine it in a Glass-house-fire, as you did the other; scrape all that is Calcin'd; and the remaining Plates stratifie and calcine, as before; Then mix this calcin'd *Copper* with *Charcoal-Dust*, and *Borax*, put it into a Crucible, and with a very strong Fire, in a melting Furnace, reduce it into a Body, which you may either let cool in the Crucible, or cast into an Ingot that is heated and greas'd.

Chrystals, or Vitriol of Copper.

DISSOLVE the aforesaid *Copper* in *Aqua Fortis*, or *Spirit of Nitre*: To one Part of *Copper*, you must put three Parts of *Spirit of Nitre*, by little at a time: Put the Dissolution upon warm Sand, and Evaporate one half: Set that which remains in the Cucurbit, in a cold place to shoot into Chrystals; the Liquor which remains may be Evaporated as the former, and again set to shoot: Dry the Chrystals between Paper, and put them in a Vial stopt from the Air.

They are a good Caustic to consume Proud Flesh.

Other Chrystals of Copper and Verdegrease.

TAKE of *Verdegrease* in Powder, one Pound, put it into a Matraass, with four Pounds of *Destill'd Vinegar*: Set them upon warm Sand, the space of three or four Days, stirring them about three or four times every Day: When 'tis well settled, pour off the blue Liquor

Liquor by Inclination, and put new Destill'd Vinegar to that which remains undissolved, and keep it in the Heat again two or three Days, stirring it about, as before; and if the Second Extraction be as blue as the First, pour it off by Inclination, and put two Pounds more of Destill'd Vinegar upon that which remains in the Cucurbit, using the same Method as before. This third Extraction will take all that is dissolveable. This done, put all the Impregnated Waters together, and filter them; Put them in a clean Cucurbit, and Evaporate one half of the Liquor; then take it from the Fire, and before it is quite cold, Decant it into a clean Vessel, from the Fæces (which sometimes fall in the Evaporation) and set it in a cool place, where it may stand forty eight Hours, to shoot into Chrystals: Pour the remaining Liquor from the Chrystals, and Evaporate again, and shoot into Crytals, as you did before.

This is call'd *Destill'd Verdegrease*, and is more us'd by *Painters* than by *Physicians*; It is very deterfive, and is sometimes us'd Externally.

Spirit of Verdegrease.

TAKE the Chrystals of *Verdegrease*, with which fill a Retort half full; Place it in Sand, giving it a gentle Fire till the Phlegm is Destilled. As soon as you perceive the Drops to be Acid, change the Receiver, and lute it well with Bladder; then increase the Fire, and the Receiver will fill with white Fumes; When you perceive those Fumes to decrease, augment the Fire, and at last lay kindled Coals round the Neck of the Retort, and keep up the Fire to the highest Degree, till the Fumes cease, and the Receiver grows cool: Then take off the Receiver, and put the Spirit into a clean Retort, and rectifie it in a gentle Heat of Sand: Put it out of the Recipient into a Bottle, and stop it close.

It is accounted a good Medicine in the *Palsy*, *Epilepsy*, and *Apoplexy*; and is also a good Menstruum to dissolve Pearl and Coral.

The Dose is from five, to twenty five, or thirty Drops in a convenient Vehicle.

The

The Crocus of Copper.

LET the *Cap. Mort.* of the Spirit of *Verdegrease* be beaten to fine Powder, and in an unglas'd Pot Reverberated for ten or twelve Hours, often stirring it with an Iron Rod; then wash off the most Subtle Powder from the Gross: Dry it, and put it up for Use.

Its *Operation* is Diaphoretic and Diuretic. It stops Bleeding, both Internal and External: It is *Anodine*, and successfully used in *Gonorrhæa's*, by Injection: It is also good against *Loosness* of the *Belly*, and *Dysenteries*.

Its *Dose* is from five, to twenty Grains.

The Tincture of Copper.

TAKE of the Reverberated *Crocus*, before it is wash'd, four Ounces; put it in a Matraass, with Spirit of Salt twelve Ounces; set it upon warm Sand to digest, forty eight Hours (shaking it about three or four times a Day) in which time the Spirit will receive a red Tincture; decant the Tincture; put upon the Copper half a pound of new
F 3 Spirit

Spirit of Salt; digest, and shake it, as before; put the tinged Spirit into a clean Retort, and draw to a dry Bottom in the second Degree of Sand Heat: To that which remains in the Bottom, put Destill'd Vinegar, twelve Ounces; Digest, and Agitate, as in the former Digestion, you will have a red Tincture, which pour off by gentle Inclination; put to that which remains, half a Pound more of Destill'd Vinegar, and digest as before; Then put the Tinctures together, and filter them: Put the filter'd Liquor into a clean Cucurbit, with its Head and Receiver; set it in Sand, and in the second Degree of Fire, let it be drawn to the Consistence of Honey; then put to it twelve Ounces of Tartariz'd Spirit of Wine: Let this Digestion be made in a Circulatory, or double Vessel, well luted; give it forty eight Hours Digestion, with the same Agitation as formerly; Decant the Tinged Spirit of Wine, and put on more; and so do till it will extract no more Tincture: Put all the Tinged Spirits into a clean Cucurbit, and in a gentle Heat of Sand, draw all off to about eight Ounces, which put into a Vial, well stoppt, for Use.

Its

Its *Operation* is Diaphoretic: It is given in all Diseases of the Head, in Fevers, Small-Pox, and the *Venereal Pox*.

Its *Dose* is from ten to fifteen Drops,

Sulphur of Copper.

Dissolve Copper in Aqua Fortis, or Spirit of Salt; filter the Dissolution; precipitate the Sulphur with Oil of Tartar, *per Deliquium*: When settled, decant the Liquor, wash the Precipitate with warm Water till it is insipid; then dry it for Use.

Observations.

ALL the Fæces from which you have drawn the former Tinctures, you may save, and reduce them into very fine Copper, in a strong Fire, with Charcoal-Dust, Nitre, and Borax.

Such Salt, or Sulphur, as you shall find to lie loose between the cemented Plates, after you take them from the Fire, you may keep apart, and only scrape off such as sticks to the Plates.

Dissolve the Copper, and Evaporate the Dissolutions always in a Chimney to avoid the obnoxious Fumes.

*Spirit of
Copper.*

To make the Spirit of *Verdegrease*, always choose the Chrystals. For Crude *Verdegrease* being mixt with some parts of the Grapes (with which it is Corroded) sends forth an Oiliness, from which the Spirit is not easily Separated by Rectification.

*Crocus of
Copper.*

Sometimes the Reverberation of the Crocus is as well performed in five or six Hours, as it is in twelve Hours, according to their Diligence in keeping up the Fire, and stirring the Matter,

C H A P. VII.

Of M E R C U R Y.

M*ercury* is no other than a Mineral, or a Metallic Water, or Liquor, agreeable to all Metals, as their Mother, but more closely adhering to Gold, than to any other, by reason of its Purity; and Philosophically opened, yields the True Metalline Menstruum, &c.

It is sometimes to be found running in the Veins of the Earth, in the perfect Form of *Quicksilver*; but much the greater quantity of it is drawn from a Mine.

Mineral Stone call'd *Natural Cinnabar* :
The Vivification of it into running *Mercury*, I shall give in one of the following Processes.

Purification of Mercury.

IT is Separated from such Dirt as has accidentally falln into it, by forcing it through a clean Cloth, or Leather: It is better cleansed by grinding it with Salt and Vinegar, and washing it with warm Water, and continuing so to do, till it blackens not the Salt or Water; But there is yet a better way of Purifying it, by putting what quantity of it you please into a Retort, with equal its weight of Salt of Tartar, and the same weight of Calx Vive upon it; Place it in a Sand Furnace, and give a gradual Fire, till it is Destill'd into the Receiver. Some fill the Receiver half full of Water, but this gives an unnecessary trouble, because the *Mercury* comes not over in Fumes, but drops out of the Neck of the Retort into the Receiver. If you repeat this three or four times, it makes the *Mercury* extream bright and pleasing to the Eye, and frees it from all its foul External Sulphur. It is also well Purify'd by Vivifying it from Sublimate

mate, Cinnabar, or an Amalgama of Gold, or Silver.

Artificial Cinnabar.

TAKE of Sulphur one Pound, melt it in an Earthen Pan; then put to it by little at a time, three Pounds of Crude *Mercury*, stirring them till no *Mercury* appears; then let them cool; Powder the Mixture, and put them into an Oval Bolt-Head Luted; Place it over a naked Fire, which increase gradually, to the fourth Degree, and the Cinnabar will be Separated in a Cake above the Faces.

The Vivification of Cinnabar.

TAKE of Cinnabar one Pound, Calcin'd Tartar, or Pot-Ashes, one Pound, Calx Vive two Pounds; Grind them well together, and put them into a Retort, leaving at least one Part of three Empty. Place it in a Reverberatory Furnace, and fit a Receiver; Let it stand twelve Hours, and then kindle the Fire, increasing it gradually to the fourth Degree; Keep it so till the *Mercury*

*cu*ry is rais'd into the Neck of the Retort and Receiver, which will be in seven or eight Hours time.

Then put all the *Mercury* into a clean Diaper Napkin, placed over a clean Earthen Dish, and squeeze it through to separate from it any Heterogeneous Matter, that may have ascended in the Destillation.

It is also Revived by mixing Cinabar, one Pound, with one Pound and a half of Filings of Iron, and Destilling as before.

The Corrosive Sublimate of Mercury.

TAke of *Quicksilver* seventy Pounds, of Corrosive Sublimate five Pounds, of Common Salt, and Nitre, of each fifty Pounds, of Rubify'd Vitriol, one hundred Pounds; of *Caput Mortuum* of *Aqua Fortis* twelve Pounds and a half. The *Mercury Sublimate*, *Common Salt*, *Nitre*, *Caput Mortuum*, and *Rubify'd Vitriol*, made into fine Powder, and kept each by themselves, are to be mix'd as followeth. The *Quicksilver* and *Sublimate* must first be mix'd with about a quarter part of the Salts, in a convenient Vessel, by Agitation. This Mixture will grow moist, and part of the *Quick-*

Quicksilver will Incorporate with the Salts. Proceed putting in the Salts (by a quarter part at a time) till all is in, continually stirring, till no part of the *Quicksilver* appear in a running Form: Then put to it the *Caput Mortuum*, which will a little thicken it. When these Ingredients are equally and well mixt, they will become pretty dry, and then you may Agitate them through a Sieve; And last of all, mix the sifted Powder, and Rubify'd Vitriol. Put this Mixture in equal Proportions, into four Subliming Glasses; (the Figure of which, with the Furnace, you will see in the beginning of this Treatise.) Place them in Ashes; fit Heads and Receivers to them, and give a gentle Fire for twenty four Hours; in which time the *Mercury* will be dissolved, and an *Aqua Fortis* will Destill into the Receivers. After that increase the Fire, and keep it in continually, till you perceive the Sublimate to rise in the Vessel above the Ashes, separated from the *Caput Mortuum*, in form of a Cake, which commonly happens about the fourth or fifth Day. When all is cool, carefully remove the Glasses from the Ashes, and take out the Cake of Sublimate, which keep for use.

*To make Corrosive Sublimâte in a
small quantity.*

TAKE two Pounds of Spirit of Salt,
one Pound and a half of Spirit of
Nitre, put them upon two Pounds of
Crude *Mercury* in a Retort; place the
Retort in a Sand-Furnace, and fit a
Receiver to it, then give a gradual
Fire to the third Degree. In eight or
ten Hours, you will find two Pounds
and a half of Sublimate in the Neck
of the Retort.

The Spirit that comes off, will (if
you add a third part of Spirit of Wine)
serve again for the same Operation.

*Mercurius Dulcis; or,
Sweet Sublimate.*

TAKE of Corrosive Sublimate, one
Pound, to which add of Purify'd
Quicksilver twelve Ounces; Grind them
well together in a Stone Mortar, with
a Glafs or Wooden Pestle, till no *Quick-*
silver appear. Then fill one third part
of

of a Bolt-Head with the Mixture ; set it in a Sand-Furnace ; let the Sand lie half an Inch thick betwixt the bottom of the Bolt-Head and the Kettle, filling it up with Sand within an Inch of the Neck ; Stop the Mouth of the Glass with a little Paper, or Cotton-wooll ; Then give Fire of the first Degree two Hours ; increase it to the second, in which keep it three Hours ; go on to the third Degree, three Hours more, and in that time the Sublimation will be performed. Take it out, when cold, and wipe the Sand and Dirt from the Bolt-Head ; break the Glass over a clean Sheet of Paper, and separate the Sublimate from the light Flowers at the top, and the Dust which lies in the bottom. Afterwards Powder this grossly, and Repeat the Sublimation the second and third time. If you Sublime it six times or more, it is called *Calomelanos*.

Its *Operation* is Cathartic, and is given to kill *Worms*, and in all *Venereal Cases*, even to the raising of a Salivation.

Its *Dose* is from five Grains to one Dram.

Red

Red Precipitate of Mercury.

TAKE *Crude Mercury* one Pound, of *Aqua Fortis* (made as at the end of this Process) two Pounds; Let them stand in the Heat of Ashes, that the *Aqua Fortis* may simmer till the Flowers begin to appear. Then increase the Fire, till the Flowers rise Red about the middle of the Glass, and proceed with the Fire to the highest Degree, for the space of three Hours. After which, let all cool, and take out the Precipitate.

It is rarely given inwardly, without Correction. It eats Proud Flesh, and is used for the laying open of Shankers. Some Chirurgeons have in the Army used it Internally with Success; and I have heard Gentlemen of Probity assert, that they knew an old Quacking Nurse, give a full Dram to very Robust Fellows in *Venereal Cases*, and they have escaped.

The Prince's Powder.

TAKE of Red Precipitate (made as before) half a Pound; grind it very well upon a Marble or Porphyry Stone;

Stone; put it into a Curcubit with two Quarts of Water; place it in a Sand Furnace, and give it Fire to make it Scalding Hot; let it stand so twelve Hours, stirring it once in two Hours; then let it cool, and decant the Water. Put this Precipitate, into Water a second, and a third time; repeating the Operation, as before. Then dry the Precipitate, and grind it with double the weight of the Salt, Extracted from the residue of the *Tinctura Metallorum*; put them into a Cucurbit with Water, proceeding in all things as above, till the Precipitate remains insipid, then dry it, and Boil it in Spirit of Wine. Decant the Spirit when cool, and dry the Precipitate.

It is Emetic and Cathartic, and is given in most *Venereal* and Chronic Cases. The Dose from three Grains, to half a Scruple.

Mercury Precipitated with Flowers of Antimony.

TAKE of Mercury (which has been Distill'd with Salt of Tartar and Quick-Lime) four Ounces; grind it with as much Flowers of *Antimony* as will

S₁.

Saturate it, put it into a Bolt-Head, or an Infernal Glass, which place in a Sand-Heat, continue it so till it is converted into Red Flowers; which are much more Cathartic than Emetic, and are given in *Venereal* and other Chronic Diseases.

The Dose from three to eight Grains.

An Excellent Precipitate of Mercury.

Dissolve four Ounces of Sal Enixum, in one Pound of Spirit of Nitre; in this Menstruum, dissolve four Ounces of *Mercury*: Put it into a Retort, which place in a Sand-Heat, give it a gradual Fire till it ceaseth dropping; when cool, take the Retort out of the Sand; in its bottom you will find a Mass of a pleasant Golden Colour; reduce this into a fine Powder, and put it into a fresh Retort; then Cohobate the drawn Spirit with four Ounces of new Spirit of Nitre; and Destil as before. Repeat it a third time, take out the Precipitate and wash it.

I have known this Medicine used with wonderful Success.

The Dose, from two to eight Grains.

G

The

The Red Panacæa of Mercury.

TAKE what quantity you please of *Red Precipitate*; put it into a Cucurbit, and afterwards, eight times its quantity of Spring-water: Let it stand in a Heat of Sand twenty four Hours, shaking it three or four times; pour off the Water, and keep it for Use. Then dry the Precipitate, and put to it eight times its weight of Spirit of Wine; Fit a Glass to the Mouth of the Cucurbit; Lute it well and set it in a gentle Heat. Let it continue there fifteen Days; shake it often, and after it is cool, pour off the Spirit of Wine by Decantation. Then take the *Precipitate*, and put it in a *China-Dish*, with twice its weight of Tincture of Sulphur; set it on the Fire, and burn off the Tincture; and then put on fresh Spirit of Wine; Let it stand in a very gentle Heat two or three Hours, and after it is settled, Decant, dry the Precipitate, and put it up for Use.

It is one of the best *Mercurial Precipitates*, especially in the *Venereal Pox*.

Its *Operation* is Cathartic, and sometimes a little Emetic.

Its *Dose* is from two to twelve, or fifteen Grains. *The*

The White Panacæa of Mercury.

GRind *Calomelanos* to very fine Powder, and put it into a Cucurbit, with eight times its weight of Spirit of Wine; Place it in warm Sand; Let it stand fifteen or twenty Days, and shake it every Day two or three times. Then fit a Glas to the Mouth of the Cucurbit, to make it a Circulating Glas; Separate the Spirit either by Decantation, or Destillation, and dry the Powder in a gentle Heat. This is called *Panacæa Mercurii*.

Its *Dose* the same with *Mercurius Dulcis*; and some think it a better and more safe Medicine, because the Spirit of Wine takes from it some of its Corrosive Salts, or at least Corrects them.

White Precipitate.

Dissolve four Ounces of *Mercury* in eight Ounces of Spirit of Nitre; when 'tis all dissolved, put it into a wide-mouth'd Glas, in which is a Pint of Spring-water; shake them together, and pour on Filter'd Brine, by little and little; let the Brine be as strong as you

can make it ; to a Pint of which put in two Ounces of Spirit of *Sal Armoniac* ; stir the Matter about, and let it settle ; then put on more Brine ; stir, and let them stand to settle as before ; and so continue putting on Brine, till you perceive no' more will Precipitate. Then let it stand five or six Hours to settle, and pour off the Water by Inclination. Put on common Water ; stir it about, and when settled, Decant as before, and so proceed, putting on fresh Water, stirring and pouring off, till you find the Precipitate insipid. Then lay a clean Paper upon a Chalk-stone, put the Precipitate upon it, and let it lie there till the Chalk has absorb'd the Water ; then remove it to a Board ; and let it dry in the Shade, between two Papers.

Its *Operation* is a little Cathartic, and Emetic sometimes ; it also procures Salivation.

It is given in the *French Pox*, *Scurvy*, and *Yellow Jaundice*.

Its *Dose* is from five to fifteen, or twenty Grains.

If you Boil it two or three Hours in Spirit of Wine, it will free it from some
of

of its Corrosive Salts, and render the Medicine more safe.

Turbith Mineral, or Yellow Precipitate.

TAKE four Ounces of *Quicksilver*, put it into a Retort, and to it four Ounces of Spirit of Nitre; Let it stand till it has done Fuming, then add Oil of Vitriol half a Pound; place the Retort in a Sand-Furnace, give it a gradual Fire to the fourth Degree, and the Operation will be performed in six or seven Hours time; Then take out the Retort, and break it; Pulverize the white Mass, either in a Glass or Marble Mortar; put it into a wide-mouth'd Glass, and pour to it three Pints of warm Water; Let it stand two Hours, and shake it three or four times; when 'tis settled, pour off the Water by Inclination, and keep it by it self; put more Water to the Yellow Powder; stir it well about, and when settled, pour off as before; and so proceed with several Ablutions, till the Powder has no Taste; Dry the Powder upon a gentle Heat of Sand, and put it up for Use.

The first Washings are good to touch old and stubborn Ulcers with, and to mix with any sweet Water to Cure the Itch.

The *Turbith* is Cathartic and Emetic, and is chiefly used in *Venereal Cases*.

The *Dose* is from two to eight Grains.

Green Precipitate.

PUT four Ounces of *Mercury* into a Matrafs, to which put of Spirit of Nitre, or double *Aqua Fortis*, eight Ounces. In another Glas put half an Ounce of fine Copper, which dissolve in an Ounce and half of Spirit of *Nitre*, or *Aqua Fortis*. Put both the Dissolutions together; place them in Sand, and Abstract the *Aqua Fortis*. In the bottom of the Vessel, there will remain a blackish Mass, which must be Powdered in a Glas or Marble Mortar. This done, put it into a Cucurbit, and pour upon it four Pints of Destill'd Vinegar; Set it in a Heat of Sand, where let it continue forty eight Hours, shaking it once in two or three Hours. At last, augment the Fire, to make the Destilled Vinegar Boil; Let it continue so at least

least one Hour, and when cold, pour off the Destill'd Vinegar by Inclination, and you will find it tinged of a Green Colour; put upon that which remains, more Destill'd Vinegar, and proceed as before; Filter the tinged Vinegar, and put it into a Cucurbit; set it in a Heat of Sand, to Evaporate gently, to the Consistence of Honey, or that it begins to sparkle; then take it from the Fire, and let it cool; when 'tis cold, it will be an hard Mass, which make into fine Powder, and keep for Use.

Its Operation is Cathartic, and Emetic.

It is a Specific in *Gonorrhæa's*, and is given in all *Venereal Cases*.

The Dose is from two to six Grains.

Æthiops Mineral.

TAKE Flowers of Sulphur, and Crude, clean Mercury, of each half a Pound; Let them be ground together in a clean Iron Mortar, till they are Incorporated into a black Powder. It will take up four or five Hours time to grind it.

The Coralline Secret of Mercury.

TAKE four Ounces of *Red Precipitate*, put it into a Retort, and put to it eight Ounces of Spirit of Nitre; set it in a Sand-Furnace, and draw off the Spirit in a gradual Heat, to the fourth Degree: This Operation will be perform'd in five or six Hours: Return that Spirit of Nitre, with four Ounces of New Spirit upon the Precipitate, and draw off as before; Repeat the same Operation, with four Ounces of New Spirit; and at last let it continue at least two Hours, in the fourth Degree of Fire; Then let all cool, and you will have a very Red and Subtile Powder, which put into a Crucible, and set in a Fire of Charcoal, but not exceeding a Worm Red, half a quarter of an Hour; Then put it into a Matrafs, and put to it three Pints of Destill'd Fountain or Rain-Water; set it in a Sand-Furnace, and give it a gradual Fire till it Boils; and so keep it half an Hour: Pour off that Water by Inclination, and dry the Powder gently: Then put to it twelve Ounces of Tartariz'd Spirit of Wine, and in a gentle Heat draw it off, and so proceed by two Cohobations. Then put to it
twelve

twelve Ounces of new Tartariz'd Spirit of Wine, fit a Glas to the Mouth of the Cucurbit, to make it Circulatory; Let it stand in a gentle Heat of Sand forty eight Hours; and at the last of all, let it simmer a little; then let all cool; Decant the Spirit of Wine, and dry the Powder, which is called *Arcanum Corallinum*.

Its *Operation* is chiefly Cathartic.

It is given in the *Gout, Dropsy, Scurvy*, and the *Pox*; and is one of the best *Precipitates* commonly made.

Its *Dose* is from three to ten Grains.

Oil of Mercury.

EVaporate the first Washings of *Mineral Turbith* to a Salt; set it in a cold moist place, and it will Dissolve into a strong Corrosive Liquor, which is call'd, *Oil of Mercury*.

It is of excellent Use to touch *Venerical Shankers*, if you apply to them Pledgers dipt therein.

Another

Another Oil of Mercury.

TAKE four Ounces of Corrosive Sublimate, and of Sublimated *Sal Armoniac* half a Pound; make them both into fine Powder, and mix them well; put them into a Retort; place it in Sand, with a Receiver to it; make a Fire, which raise gradually, to the fourth Degree, and in seven or eight Hours time the Operation will be done.

Take all that is Destilled and Sublimed, grind it in a Glass or Marble Mortar, and afterwards set it in a Cellar, in a flat Glass, to Dissolve into a Liquor, which is call'd, *Oil of Mercury*.

It is Endued with the same Vertues the Preceeding Oil is.

Observations.

Cinnabar.

TAKE care you place the Mixture in a Chimney, that the Stench of the Brimstone do not offend you. And *Note*, that it is sufficient if the Sulphur be kept in just so much Heat as to be
Fluid

Fluid, till such time the *Mercury* be incorporated with it.

The Mixture is left twelve Hours *Revificat.* without Fire, to give the Calx time to *of Cinnab.* swell gradually, which otherways might endanger cracking the Retort; And also that the Alcalical Salt may have mortify'd the Acid Sulphureous Spirit, by which the *Mercury* was coagulated; which done, the *Mercury* will separate more easily: As for putting Water into the Receiver, 'tis a trouble to no purpose; for I have several times reviv'd *Mercury* from an Amalgama of Cinnabar, Sublimate and Precipitate, without one drop of Water in the Receiver.

The Mixture of *Crude Mercury*, Sublimate, Salt, and Nitre, becomes moist, and of a Pappish Substance; to which, if you put the Rubify'd Vitriol, it wou'd presently grow hard as a Stone; which wou'd be very troublesome to reduce again into Powder. But the *Caput Mortuum* of *Aqua Fortis*, or (if you have it by you) some *Caput Mortuum* of *Mercury Sublimate* answers the same end, and brings the Mixture to a temperate dryness, which by Agitation comes into a Powder of it self. With this Powder the Rubify'd

*Corrosive
Subli-
mate.*

Rubify'd Vitriol may conveniently be Incorporated, and the Operation ought always to be performed in a Chimney, to avoid the Nitrous Fumes, which are very Suffocating. You may make the Composition in any quantity your Occasion requires ; the less your quantity of Mixtures, the less Time and Fire will finish the Operation.

*The Sweet
Subli-
mate.*

When you grind the Sublimate and Crude Mercury together, muffle your self with a Napkin, or Handkerchief, to keep the Volatile Atoms, which will rise from the Sublimate, out of your Mouth and Nostrils ; and be careful not to make the Fire too big, for too fierce a Fire makes it rise black ; and if so, you must sublime it again ; and if that Sublimation does not bring it to its Colour, mix with every Pound of *Mercurius Dulcis*, one Ounce and a half of decripitated Salt, and sublime it again,

*Precipi-
tate Red
Subli.*

The *Aqua Fortis* which you save in making of Sublimate is best for this Operation, which also ought to be perform'd in a Chimney. If you take double the quantity of this Sublimated Spirit, the *Mercury* will sooner dissolve.

The

The Red Precipitate must also be ground very fine before it is wash'd, for the Reason aforesaid. Mr. Barton, an Eminent Surgeon of London, kept this as a Secret.

Red Panacea of Mercury.

Before you put the Spirit of Wine to it, you must reduce it into a most impalpable Powder, which must be past through the finest Sieve, that so the Spirit of Wine may the better act upon those Minute Atoms, and wash off part of the Corrosive Salt which keeps it in a dry Form.

White Panacea of Mercury.

Put not above two Ounces of the Spirit of Nitre at a time upon the Crude Mercury; and when it has acted upon the Mercury, and the Fumes begin to cease, put on two Ounces more, and so do till the Mercury is all dissolv'd: If you should put all the Spirit of Nitre on at once, the Action would be so violent that it would heat too suddenly, and endanger the Glafs: Be as cautious as you can, the Fumes will rise with some Violence, and therefore this Operation ought always to be done in a Chimney that the ill Fumes may be avoided.

White Precipitate.

The

**Mineral
Turbith.**

The Oil of Vitriol does not dissolve the Mercury, it only calcines it, but the Spirit of Nitre dissolves it, and produces a Turbith more subtile than that made with Oil of Vitriol alone.

**Aethiops:
Mineral.**

Here is nothing worthy of Remark, but to choose clean and good Ingredients, and to grind so long till the Medicine becomes very black.

**GreenPre-
cipitate.**

You ought to observe the same Precaution here, as in the White Precipitate, viz. to put the Spirit of Nitre upon the Mercury by little and little, and also to perform the Operation in a Chimney.

**Arcanum
Coralli-
num.**

You may take clean Crude Mercury, instead of red Precipitate, if you please: The first Dissolution and Exsiccation makes it red Precipitate; then you may freely put all the Spirit of Nitre upon the Precipitate at once, because the Action of the Mercury, and Spirit of Nitre is over in the first Dissolution of the Mercury. In all things else proceed as the Process directs.

These

These Oils are Mercury coagulated by the corrosive Spirits of Vitriol, common Salt, and Sal Armoniac, which afterwards will dissolve again like a Salt; it ought to be Evaporated in Glass, because Earthen Vessels will suck in too much of the Salt, and it will prey upon the Lead with which the Vessel is glaz'd.

Oils of Mercury.

If you desire to make Mercury Sublimate in a small quantity, dissolve one Pound of Crude Mercury in eighteen or twenty Ounces of Spirit of Nitre: Distil off that Spirit, break the Glass, and take out the Mass, beat it into Powder in a Glass or Marble Mortar; and afterwards take of Vitriol calcin'd and powder'd, and Common Salt *ana* one Pound; grind them all well together fill a Matrafs not above half full, and set it on a Sand Furnace; increase the Fire gradually to the third Degree, and the Sublimate will all arise in seven or eight Hours.

Corrosive Sublimate in small quantity.

CHAP.

C H A P. VIII.

Of Bismuth, or Tin-glass.

IT is a Smooth, White, Metallic Matter, Brittle, and breaks in large Flakes, like *Regulus Martis*. It is Artificial, and compos'd of Tin, Tartar, and Arsnic, not made in any quantity in *England*, but in the Northern Parts of *Germany*, from whence we have it.

*Preparations of Bismuth, or Tin-glass.**Flowers of Bismuth, or Tin-glass.*

BE A T the *Tin-glass* into very fine Powder, and to four Ounces of it put half a Pound of Nitre also in fine Powder; put in that Mixture by half a Spoonful at a time into an Earthen Body perforated in the Side; when the Body is red hot, and when the Operation is over, take away the Aludels, and wipe off the Flowers with a Feather.

These *Flowers* are very white, and esteemed an excellent *Fucus*.

Ma-

Magistery of Bismuth.

PUT one Pound of Spirit of Nitre (made with Oil of Vitriol) into a quart Body uncut, and add to it as much Powder of *Tinglass*, by an Ounce at a time, as the Spirit is capable of dissolving, which will be about seven or eight Ounces; Then take two Gallons of Water, and dissolve it in four Ounces of common Salt: filter the whole, and put it into a clean Earthen Pan; pour upon it the Dissolution of *Bismuth*, and immediately it will turn Milky, and a Precipitate will fall; Permit it to stand till settled, and by gentle Inclination, pour out the Water from the *Magistery*; put on more fresh Water, stir it well, and when settled, pour it off, and so continue the Ablutions, till the *Magistery* is insipid, which dry gently, and keep for Use; and that is the same with the Flowers.

Observations.

Flowers of
Bismuth.

LET all be sublimed, which will rise from one half Spoonful, before you put in another, which you may know by the ceasing of the little crackling; wash the Salt from that which remains in the bottom of the Subliming Pot, and it is not only a good *Fucus*, but also a good *Diaphoretic*, especially if the Spirit of Nitre be once or twice desill'd from it after its washing.

Its Dose and Virtue is the same with Mineral Bezoar.

Magistery
of Bismuth.

Be sure to place the Cucurbit (in which you make the Dissolution) in the Chimney, the better to convey the Fumes, which are bad for the Breast, Lungs and Brain: And if you see a black Surface upon the Scum of the Water, when you make the Precipitation, take it off with a Spoon.

CHAP. IX.

Of Antimony.

ANtimony is a Mineral Body, nearly related to Metals, but more approaching to the Nature of Saturn. It is composed of a Mineral Sulphur, partly pure, and of a Solar Nature, and partly Combustible, like other Sulphurs.

It is full of an indigested fuliginous Mercury, but more fixed than the Common. It is a most excellent Subject both for Internal and External Medicine, &c.

Regulus of Antimony.

TAKE of Antimony one Pound, Tartar twelve Ounces: Nitre six Ounces, powder them finely and mix them exactly; then put your Crucible in a melting Furnace, let the Fire increase gradually till the Crucible is red hot, before you put in your Mixture, which do by a small Spoonful at a time till all be in; then increase the Fire and

H 2

stop

stop the Door of the Wind-Furnace, and there let it continue in Fusion half or three quarters of an Hour, till its sparkling in the Crucible is well spent; then pour it into a little Mortar, being first made clean, and afterwards heated and greas'd with a little Butter, Tallow, or Wax. Let it stand till cold; and then turn it out; beat off the *Scoria*; and put it by in an Earthen Pan to make the *Sulphur Auratum* with; then melt your *Regulus* again, and project one Ounce of Nitre in Powder: Let it stand in a Fusion a quarter of an Hour, and cast it out into the Mortar, heated and greas'd as before, and it will be more pure.

If you would have it yet more pure repeat the last Operation once more, still saving the *Scoria* together; This *Regulus* you may form into Cups, Pills, or infuse it in White-wine ten or twelve Hours, and it will have the same Operation with the Infusion of *Crocus Metallorum*.

Different Quantities are us'd in the making this *Regulus*: Some take equal Parts of Antimony, Nitre and Tartar; Others, Antimony one Pound, Tartar
one

one Pound and half, and Nitre two Pounds; but I have found no Composition produce more, or better *Regulus* than this I have given you.

The Golden Sulphur of Antimony.

BOIL the *Scoria* of the *Regulus* in twenty times its Weight of Fountain-water, the space of one Hour; stir it often, and whilst hot, run it through a fine straining-Clout; then put Destill'd Vinegar to it, and there will Precipitate a red Powder; let it stand to settle, and drop more Destill'd Vinegar into it, and if it turn the clean Liquor muddy, let it settle, and drop yet more Destill'd Vinegar again into it; and so proceed till you see the subsiding Liquor will not turn muddy by putting Destill'd Vinegar to it: Wash it with many warm Waters till it is without Taste or Smell; then put it into a Coffin of Paper to drain off as much of the Water as you can: And lastly, put it into a flat Earthen Dish, and set it in a gentle Warmth to dry.

It is Emetic and Cathartic, and endow'd with the same Vertues other Antimonial Emetics are.

Its Dose is from one to six or eight Grains.

The Martial Regulus of Antimony.

TAKE of small Nails one Pound and an half, put them into a large Crucible placed upon a Tile in a melting Furnace, let the Fire kindle about them gradually till the Nails are ready to melt, then project (by a good Spoonful at a time) of Antimony one Pound, Nitre four Ounces, and two Ounces of Tartar, powdered and well mixt; bury the Crucible in Charcoal, shut the Door of the Furnace, and let it stand in the strongest Fusion till it has done sparkling: Then take it from the Fire, and pour it into an Iron Mortar, hot and greaz'd as usual: When 'tis cold, beat off the *Storia*, and melt it again; and put to it (by a Spoonful at a time) two or three Ounces of Nitre in gross Powder; Let it stand in strong Fusion as before, till it cease to sparkle; then remove

move it from the Fire, and pour it into a warm Mortar as before: Repeat the same Operation the third and fourth time, always casting in two Ounces of Nitre, but the fourth time let the *Regulus* melt well, before you put in the Salt Petre; when cold, beat off the *Scoria*, and you will see a perfect Star upon the Surface of the *Regulus*.

Its Operation is as the *Regulus Antimonii*, but more Cathartic. Some say 'tis altogether Cathartic, but I have not found it so.

It is given in the *Venereal* Disease, Dropsy and Scurvy.

Its Dose is from two to eight Grains.

Regulus Jovis, or Regulus of Antimony with Tin.

TAKE good *Regulus of Antimony*, four Ounces; melt it in a Crucible with four Ounces of Tin a quarter of an Hour, in which time put in one Ounce of Nitre, and when the Flame is spent, and the Matter well fluxt;

H 4

take

take it from the Fire, and cast it into a warm greas'd Mortar,

In the same manner you make the *Regulus* of Gold, Silver, Copper, or Lead.

It is usually given in the Suffocation of the Womb, and to open all Obstructions.

Its *Dose* is from three Grains to a Scruple.

Crocus Metallorum.

TAKE of Antimony one Pound, Nitre fourteen Ounces, and Common Salt two Ounces; powder them finely, and mix them well: Set a Crucible in the Fire; when it is red hot, put in the Mixture by a Spoonful at once; when all is in, shut the Door of the Furnace; let the Matter stand in a strong Fusion half an Hour; then take it from the Fire, and cast it into a warm greas'd Mortar.

Its Operation is Emetic: But the Infusion of it in White-Wine or Canary,

is generally us'd thus, (*viz.*) one Ounce of the *Crocus* in fine Powder, to a Quart of Wine; of which is given from one Ounce and an half, to four Ounces.

Its *Dose* is from two to eight Grains.

Diaphoretic Antimony.

TAKE of Antimony one Pound, of Salt Petre three Pounds; powder and mix them exactly; then put them into a red hot Crucible, by a Spoonful at a time, and let it stand half an Hour; Remove it before 'tis quite cold, and put it into a large Earthen Pan, almost full either of hot or cold Water: Let it remain there ten or twelve Hours to dissolve the Salt; then take it out, and if any of the Calcin'd Antimony adheres to the Crucible, scrape it off with a Knife; stir the white Matter about with a clean Stick, and when 'tis settled, decant the Water into a clean Pan, and keep it to make the Antimonial *Sal Prunella*; put on more warm Water, and decant it as useless; Repeat the Ablution till the Antimony is insipid. When this is done, put more fresh Water, stir it about, and presently

ly pour it off into another Pan ; put on more, and pour off as before, and so do till all the finest part of the Preparation is washt off, and by this means you may separate it from the gross dirty Part. Having thus separated the finer Part, let it stand to settle, and pour off the Water by Inclination ; put the *Antimonium Diaphoreticum* upon a clean Sheet of Whited-brown Paper, and lay it upon a Chalk Stone to suck in the Moisture : Remove it in a very gentle Heat to be perfectly dried, and put it up for Use.

Its Operation is Diaphoretic, and is given in *Venereal* Diseases, Dropsies, Scurvies, Malignant Feavers, and the Small Pox.

Its usual Dose is from five Grains to twenty five ; but I have known it given with good Success by half an Ounce at a Dose, and repeated two or three times in a Day, and that for several Days successively.

The first Washing which you put by, may be evaporated, and you will have the *Antimonial Sal Prunelle*, which is endow'd

endow'd with the same Virtues as *Sal Polichrestum*.

Tincture of Antimony with Antimonium Diaphoreticum.

TAKE of Antimonium Diaphoreticum one Pound, of pure Salt Petre three Pounds; let them be finely powder'd and well mixt; then by a Spoonful at a time put them into a red hot Crucible: Let it stand half an hour in a strong melting Heat; then pour it into a warm Iron Mortar, beat it to Powder, and before it attracts the Air, return it into a Matrafs, and add three Pints of Tartariz'd Spirit of Wine; let it digest three Days and Nights, and you will have a glorious Tincture, pleasant to the Taste, very Fragrant, and far excelling all other Tinctures of Antimony.

The Dose from ten to fixty Drops.

Ceruss

Cerufs of Antimony.

IT is made with the *Regulus* of Antimony and Nitre in the same Proportion and Manner as you made the *Antimonium Diaphoreticum*.

Its Use and Dose the same.

Or Thus.

TAKE of *Regulus* of Antimony finely powder'd four Ounces; put it into a Retort, and add (by an Ounce at a time) twelve Ounces of Spirit of Nitre; then shake it, place it in a Sand Furnace, lute on a Receiver, and give it a gentle Fire till it begins to drop; then increase the Fire gradually to the fourth Degree, keep it so till no Drops fall from the Nose of the Retort, or Fumes fly into the Receiver. Let it cool, and take out the Remains from the Retort; powder and wash it sweet as you do the other *Cerufs*, and dry it.

It is Diaphoretic, and is look'd upon to equal Bezoar Mineral in Virtue.

The Dose from ten to fifty Grains.

Anti-

Antihecticum Poterji.

IT is made of one part of *Regulus Jovis*, and three parts of Nitre beaten into fine Powder, and mixt; and in all things proceed as you did with *Cerussa Antimonii*.

It's administred in the Pox, Hectic Fevers, and Consumptions.

Its Dose is from five Grains to half a Drachm.

The Medicinal Antimony.

ANtimony five Ounces, Salt of Tartar one Ounce, Common Salt four Ounces, powder and mix them well, and let them stand in the Crucible half an Hour melted; then turn out the Compound into a warm greas'd Cone, or let it stand in the Crucible till cold; beat off the *Scoria*, and powder the purer part which remains in the bottom; give it several lotions of warm Water till the Salts are all washt from it; then dry it and keep it for Use.

Some

Some attribute only a Diaphoretic Quality to it; but it will in some Constitutions, both Vomit and Purge.

Its Dose is from Three to Fifteen Grains.

The Magistery of Antimony.

TAKE four Ounces of *Antimony* in very fine Powder; put it into a large Matrafs; pour upon it one Pound of *Aqua Regis* by four Ounces at a time, set it upon a Sand-heat in a Chimney, that the Fumes may ascend without Offence: Make a small Fire, and let it stand in a heat of Digestion ten or twelve Hours, shaking it once in two or three Hours; then let it cool and put to it a Gallon of Fountain-water, which you must pour off before it settles: Put to it more Water; stir it and pour it to the other before it settles, repeat this Operation till nothing remains in the Matrafs but a Yellow Powder, which is the Combustible *Sulphur* of *Antimony*; let the white Powder settle, and decant the Water, and by several Ablutions make the Magistery insipid, dry it and keep it for Use.

Its

Its Operation is more Cathartic than Emetic, sometimes it operates by Sweat.

It is used in Apoplexies, the Palsy, and Hypochondriacal Distempers.

Its Dose is from five to fifteen Grains.

Poterius his Cordial.

TAKE *Regulus Martis* in fine Powder four Ounces, of Gold dissolved in *Aqua Regis* one Ounce and an half; Let the *Aqua Regis* be drawn from the Gold, then mix it with the *Regulus*: Put to the Gold and *Regulus* twelve Ounces of Nitre; mix all exactly, and put it into a red hot Crucible by a spoonful at a time; Let it stand in a melting Heat an Hour, then let it cool, and proceed as you did in the *Antihecticum Poteris*, or *Cerussa Antimonii*: I have made it both with Gold and the Anodine Sulphur of Mars; and the latter has been approv'd of as the better Medicine.

Its Operation is Diaphoretic, and it is said to be a Purifier of the Blood, a Strength-

Strengthenr of the Heart and Stomach,
good against Malignant Fevers, the
Small Pox and the Plague.

Its Dose is from six Grains to two
Scruples.

If to one Ounce of this Magistery you
put twelve Ounces of *Spiritus Nitri Dul-*
cis, and let them stand three Days in
Digestion in a Matraass, shaking them
now and then, after which draw off
the *Spiritus Nitri Dulcis*; and if you
afterwards put upon it one Pound and
an half of Spirit of Wine tartariz'd, and
let it stand twenty four Hours on warm
Sand, and decant the Spirit of Wine,
and lastly set it in an Arch of a Glass-
House five or six Days, it will have ac-
quir'd a red Colour, and be more Di-
aphoretic.

Its Operation is then Diaphoretic and
sometimes a little Cathartic; and I
have heard it has cur'd the Venereal Pox
and Gout, Kings-Evil, and Leprosy.

Its Dose the same as before.

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The Glass of Antimony.

TAKE a Pound of Antimony, and reduce it into fine Powder, and set it over a gentle Fire; calcine it in an unglaz'd Pan, till it comes to be of an Ash-Colour and ceases to Fume; you must keep it continually stirring, and if it should run into Lumps, you must powder them again, and then proceed to finish the Calcination: When that is done, put the Calcin'd Antimony into a Crucible; set it upon a Tile in a Wind Furnace; put a thin Tile on the Top, and cover it all over with Coals, and when 'tis brought to Fusion, keep it so in a strong Fire for an Hour; then put into it an Iron Rod, and when the melted Antimony which adheres to it, is transparent, pour it upon a smooth hot Marble, and when 'tis cold put it up for Use. This is *Vitrum Antimonii*, or *Stibium*.

Its Operation is Emetic, and one of the strongest that is prepared.

Its Dose is from Two to eight Grains. It is used in Infusion like *Crocus Metallorum*, and given in the same Cases.

I

Purgine

Purging Antimony.

TAKE four Ounces of the Glass of Antimony finely powder'd, put to it gradually twelve Ounces of Oil of Vitriol; let it digest forty eight Hours: Destil it in a Sand-heat, let it cool; then wash the Powder s. a. till all its Acrimony is lost: Dry it, and grind it with an equal Weight of Sal Mirabile, and of Sal Enixum a double Quantity. Put this Mixture into a Crucible, which place in a Wind-Furnace; after it has stood a quarter of an Hour in a gentle Fusion, take it from the Fire; when cold wash the Powder, dry it and keep it for Use.

'Tis the most certain Antimonial Purge I ever met with. I have indeed try'd many Processes which have been confidently deliver'd to us by several Authors of no small Reputation; but, till I invented this, I never met with one that answer'd my Expectation.

It operates without nauseating the Stomach.

The Dose from two Grains to half a Scruple. By

By the use of this Powder only, I have known three confirm'd Poxes cured within these two Years.

The Tincture of Metalls.

TAKE half a Pound of Regulus Martis; of Spittle Dust (which is the *Scoria*, that falls from hot Plates of Copper quencht in Water) four Ounces, (or the like quantity of *Caput Mort.* of Spirit of Verdigrease) of Salt Petre two Pounds, of Tartar half a Pound. Powder and mix them well, and put them into a red hot Crucible by Spoonfuls; after it has stood melting half an Hour, remove it from the Fire, and powder it in a clean warm Mortar. Before it attracts the Air return it into a Matrafs, and add two Pounds of tarraz'd Spirit of Wine: Make a Circulating Vessel of the Matrafs, and let it digest two Days. When cool and settled decant the Tincture.

The Dose from twenty to an hundred Drops.

I 2

White

White Flowers of Antimony.

PRepare a Set of Subliming Pots, and let the lowermost be of the Shape of an Earthen Body; it must be twelve or fourteen Inches high, and its Mouth three Inches Diameter: In the middle of this Body must be a Perforation of an Inch and a quarter Diameter, exactly fitted with a Stopple of good Earth; place this upon an Iron Bar in a naked Furnace, nine or ten Inches above the Grate, and close the Body to the Perforation with Lute and Tiles, only leaving three or four Registers of an Inch and a quarter Diameter, at an equal Distance. Then fit to it three or four Aludels of Earth, one above another, and upon the uppermost Aludel fit a Glass-Head with a Beak; Lute the junctures of the Aludels Body and Head, and to the Beak fit a small Receiver unluted.

Kindle the Fire, and when the lower Pot is red hot, put in of Antimony in Powder about a Spoonful, with a Latins-ware Scoop made for that purpose; Keep up the Fire well, and when you perceive no more Fume to rise into the Head,

Head, put in another Spoonful, and so continue till you have as many Flowers as you desire; when all is cold, take off the Aludels carefully, and with a Feather wipe off the Flowers upon a Sheet of Paper, and put them up for use,

It is a strong Emetic, and its violence is such, that 'tis seldom given without Correction.

It is given to Lunaticks, also in Agues.

Its Dose is from two to five or six Grains.

Flowers of Regulus of Antimony, with Sal Armoniac.

TAKE *Regulus* of Antimony, and clean *Sal Armoniac* ana half a Pound, Powder and mix them well; and in all things proceed as in making the other Flowers. When you wipe the Flowers from the Aludels; put them into clean Water to dissolve the *Sal Armoniac*, and wash the Flowers from the
I 3 Salt;

Salt ; Dry them, and put them up in a Vial for use.

They are not so violent as the former, and given in the same Cases.

Antimonium Resuscitatum, or Antimony Reviv'd.

TAKE the Flowers of Antimony and *Sal Armoniac*, without separation; Put them into a Cucurbit, and to every Four Ounces of these Flowers, put of Destill'd Vinegar One Pound; Let them stand upon warm Sand in Digestion Eight Days; Then exhale the Destill'd Vinegar, and by Ablution sweeten the Flowers, which then will be of the Pristine Colour of Antimony, and is accounted a very good Medicine.

Its Operation is Emetic, and sometimes Diaphoretic.

It is administred in the Scurvy, Dropsy, Jaundice, Agues, Fevers and Consumptions.

Its Dose is from Four to Ten Grains.
Dr.

Dr. B's Panacæa of Antimony.

TAKE of Antimony Six Ounces, of Nitre ten Ounces, of Common Salt one Ounce and an half, and of Charcoal an Ounce; let them all be made into fine Powder, and well mix'd, and be put into a red hot Crucible by half a Spoonful at a time; continue the Fire a quarter of an Hour after: Then either put it into a Cone, or let it cool in the Crucible, and you will find three Substances, viz. in the Bottom a little *Regulus*; above that a compact Matter, something like the Liver of Antimony; upon the Surface, a more Spungy Mass; separate them from one another, and put by the *Regulus*; Powder the other two, and wash them a-part, till they have no Taste of the Salts; dry them gently, and keep for use.

The uppermost Substance is counted the best, and is of a fine Golden Colour, when 'tis wash'd. The middle Substance is not of so pleasant a Colour, and works more churlishly. The *Regulus* is equal with the *Regulus* of Antimony.

Its *Operation* is Emetic and Cathartic, and is given in the *Venereal Pox*, Gout, Dropfy, Scurvy, and all Intermitting Fevers.

Its *Dose* is from two to five or six Grains.

☞ This is that which Mr. Lockyer aimed at in the Composition of his Pill, by which he got a good Estate.

The Panacea of Antimony without Fire.

TAKE four Ounces of Antimony, grind it to a most subtile Powder; put it into a Matrafs, and pour it upon one Pound of strong Capital Lees of the Soap-Boylers: Set them to digest on warm Sand, four or five Days, and shake them often; then add some warm Fountain-Water, shake it well about; let it stand two or three Seconds of Time, and pour it off into a clean Pan; Repeat that Ablution, till all the brown Powder is separated from that which appears like crude Antimony; to which
put

put more Capital Lees, and so proceed in all things as before, till all the Antimony is brought into a subtile brown Powder; which wash well from its Salts; dry it, and keep it for use.

Its Operation is sometimes Diaphoretic, other times Diuretic; and also Cathartic and Emetic.

Its Virtues are the same with other Antimonial Preparations: and is frequently given as a Succedanium to that call'd *Russel's Powder*.

Its Dose is from five to twenty or thirty Grains.

*The Butter, or Icy Oil of Antimony,
and its Cinnabar.*

TAKE of Antimony and Mercury Sublimate *ana* two Pounds; Powder and mix them well; put them into a coated Retort, which must not be charg'd above a third part; set it upon an Iron Bar in a little flat Dish with some Sand in it in an open Furnace; make a small Fire at first, but increase
gra-

gradually in the second Degree, and the Butter will rise into the Neck of the Retort, which melt into the Receiver with Live Coals. Keep the Fire still in that Degree, till you perceive the Neck of the Retort tinged Red: Then change the Receiver, and increase the Fire to the third Degree, where keep it two Hours; after that give two Hours Fire of the fourth, and it will raise the Cinnabar into the Neck of the Retort: When all is cold, take it out of the Furnace, break the Retort, and take out the Cinnabar,

It is only used Externally as a Caustic.

The true Cinnabar of Antimony is scarce to be found even amongst Chymists. Its Composition is as followeth.

Take fifteen Pounds of crude Mercury, five Pounds of common Sulphur, crude Antimony in subtile Powder one Pound and a half, mix them well, *f. a.* and sublime them in a luted Bolt-head in a naked Fire.

This

This Cinnabar is of a finer Colour, and more easy to be pulveriz'd than native Cinnabar.

Mercurius Vitæ.

LET the Butter be melted, either by the Air, or a gentle Heat: Put it into a clean Retort; set it in a Sand Furnace, and by a Fire of the second Degree destil it; the Butter will be made more white and pure, and by this Rectification be separated from some dirty Fæces, which will remain in the bottom of the Retort. Melt all the Rectify'd Butter into the Receiver, and put to it warm Fountain-water; stir it well with a clean Stick; when 'tis settled, pour off by Inclination, and keep the first by it self. Put on more Water, stir, and let it settle; and so do till the Powder is freed from all saltish Taste; then dry it gently, and keep for Use.
Use.

Its Operation is Emetic.

Its

Its Virtues are the same with the
Flowers of Antimony.

Its Dose from two to eight Grains.

Mineral Bezoar.

TAKE four Ounces of Rectify'd Butter of Antimony; put it into a Retort, and to it twelve or sixteen Ounces of Spirit of Nitre, or *Aqua Stygia*, by two or three Ounces at a time. Place the Retort in a Chimney, to avoid the hurtful Fumes: When all the Spirit of Nitre is in, and the vehemence of its Action over, put it in a Sand Furnace; Fit and Lute a Receiver to it, and give gradual Fire to the third Degree. When it ceases to drop, let out the Fire, and when cold, take it out, and keep it in a Glass well stop'd from the Air.

Its Operation is Sudorific; which Operation it performs more sensibly than Antim. Diaphoret.

It is counted a great Resister of Poison, and given in all Pestilential Distempers.

Its

Its *Dose* is from ten Grains to two Scruples, even to a Dram.

Some Calcine in it a Crucible, after it is taken out of the Retort : Others think it is better to let that part of the Spirit of Nitre it holds, to remain with it.

Oil of Antimony, with Sugar-Candy.

TAKE of Antimony and Sugar-Candy, of each one Pound ; let them be well powder'd, and mix'd with three Pounds of clean dry Sand ; put them in a Retort, leaving it above half empty ; set it in a SandFurnace, and with a Bladder dipt in the White of an Egg ; Increase the Fire to the Second Degree, and so keep it one Hour ; then to the Third, in which continue it two Hours ; and so proceed to the Fourth two Hours more, which will finish the Operation : When all is cold, take out the Liquor, and keep for Use.

It cleans Ulcers and Teters, it also kills the Itch.

The Essence of Antimony.

TAke the Flowers of Antimony, or *Mercurius Vita*, and *Sal Mirabile*, of each one Ounce; of clean Chrystals of Tartar two Ounces; of Sugar-Candy four Ounces; Powder and grind them well together; Put them in a clean Pan, with three Pints of Spring-water; Let them simmer over a Fire, for eight or ten Hours, and stir them often. Filter the Liquor whilst it is warm, and Evaporate it in a gentle Heat, to the Consistence of a Syrup. Then put to it a Pint of Spirit of Wine; let it stand in Digestion in a Matraass well stoppt, three Days, in which time it will be well tinged: Then by gentle Inclination, pour off the Tincture into a Body, to which fit a Head and Receiver, and draw off one half of the Spirit of Wine; that which remains in the Body put into a Vial, and keep for Use.

Its *Operation* is Emetic and Cathartic, and is given in all Diseases, wherein Antimonial Medicines are proper.

Its

Its *Dose* from five, to fifty Drops, in Ale, Wine, Milk, or Water.

The Tincture of Antimony.

PUT half a Pound of Salt of Tartar into a Crucible, set it in a melting Furnace, and heat it till it melts; then put to it (by a spoonful at a time) four Ounces of Antimony in Powder; let it stand in a strong melting heat, the space of one Hour; take it from the Fire and put it into a warm Mortar; beat it to Powder, and whilst warm, put it into a Matrafs; pour upon it Tartariz'd Spirit of Wine one Pound, and invert a Glass into the Mouth of the Cucurbit; lute it well, and set it in Digestion three or four Days, in which time the Spirit of Wine will be tinged, take it from the heat, set it on one side to settle, and decant it into a dry Vial, which keep well stop't for use.

Its *Operation* is Diaphoretic and Diuretic, it opens the Obstructions of Women, is good against Hypochondriac Melancholy, Small-Pox, and Malignant Fevers.

Its

Its Dose is from ten to fifty or sixty Drops.

Tinctura Regalis.

TAke of Copper in little pieces two Ounces, put it into a Crucible, set it in a melting Furnace; when it is red hot, put to it (in gross Powder) fourteen Ounces of *Regalus Jovis*; let them melt well together the space of a quarter of an Hour; then cast them into a warm greas'd Cone, when cold beat them into Powder, which must be put (by a Spoonful at a time) into double its weight of melted Salt of Tartar; when it is all in, shut the door of your Melting Furnace, and keep it in the strongest Fire you can give for two or three Hours: Then take it from the Fire, and pour it into a clean warm Iron Mortar; beat it to Powder whilst warm, and before it attracts any Air, put it in a Matrafs where there is one Pound of Spirit of Wine tartariz'd; Lute it as you did the *Tinctura Antimonii*, and in all things proceed as in that Tincture.

Its

Its Operation is Sudorific and Diuretic; some think it almost an Universal Medicine, and indeed I have known it successfully us'd in several Distempers.

Its Dose is the same with the Tincture of Metals.

The Sulphur of Metals.

TAKE four Ounces of Nitre, of Sulphur two Ounces, and one Ounce of Salt of Tartar; powder and mix them well, then take of the *Regulus* of Mars and Venus (purify'd by repeated Fusions) four Ounces; powder the *Regulus* also very finely, and mix it exactly with the other Powder: Put the Mixture into a red hot Crucible, by a quarter of a Spoonful at a time. When it has stood half a quarter of an Hour, in Fusion remove it, and when cold reduce it into a fine Powder; then put it into a Glass Body, and add two quarts of Spring Water, set it in a Sand-heat to dissolve the Salt and Sulphur: Filter the Dissolution, and precipitate the Sulphur

phur with any Acid, wash and dry it
f. a. for Use.

This is a true Sulphur of Metals, it is
Anodine and Diaphoretic.

The Dose from five Grains to one
Dram.

Observations.

*Antimon.
Regulus.*

THE Melting Furnace must be pla-
ced in a Chimney, and have a
care you do not bring any Spark of Fire
along with the Spoon you project the
Mixture with; if you do, it will set all
the Composition on Fire.

*Sulphur.
Auratum.*

If you do not pass the Liquor through
the Strainer while it is hot, it will co-
agulate when it has past the Filter: and
when you precipitate the Sulphur, re-
move it into some place wherein the
Stench may not offend you. You must
wash it very often with warm Water,
to dissolve the Salts which adhere very
strictly to it.

*Regulus
Martis.*

Nails are better than Filings of Iron,
because they lie more hollow, giving
way

way for the Antimony to mix and melt more easily with the *Mars*.

If you give this *Regulus* two or three *Regulus* Fusions more, and in each Fusion cast *Furn.* one Ounce and half of Nitre into it, and do so as long as the Nitre meets with any Sulphur to cause a Flame, the *Regulus* will be as white as Silver.

I lessen the usual quantity of Nitre, *Crocus* and in its place substitute common Salt, *Metal-* which both helps Fusion, and causes a *lorum.* better Separation of the Crocus from the Scoria.

You must in this, as in most Calcina- *Antimon.* tions of Antimony with Nitre, be care- *Diapho-* ful not to bring a Spark of Fire from *ret.* the Furnace to the Mixture; and after Calcination, beware you put not the Crucible into Water, when it is too hot, lest it fly all about your Face.

In the *Ceruss* there is no danger of fi- *Cerussa* ring the Mixture, because the Combu- *Antimon.* stible Sulphur is spent in making the *Regulus*. From this, or any other Antimonial Diaphoretic Powder, you may extract Tinctures.

*Antibest.
Poterii.*

The *Jupiter* gives it a bluish Colour; and that is all in which it differs from the *Cerussa Antimonii*.

*Antimo-
nium Me-
dic.*

Let the Salts be very dry when they are mixt with the Antimony, and after they are sufficiently melted together, and become cold, make them into a subtile Powder, before you wash off the Salts.

*Magister.
Antimo-
nii.*

Make the Dissolution in a Chimney, and in a large Vessel, because the Ebullition is so Violent, that if the Vessel be not large, the Matter will boil over.

*Poterius.
his Cordi-
al.*

If you will not be at the Charge of Gold in this Preparation, the Anodine Sulphur of *Mars* is a good *Succedaneum*.

*Vitrum
Antimon.*

Its Calcination requires Care and Patience; the Fusion must be strong, and the quantity propos'd in the Process, requires at least two Hours Fire.

*Flores
Antimon.*

This Operation requires Attendance; for if you let the Heat slacken you will lose both Time and Fire considerably, before you raise the Flowers again.

If

If you desire but a small quantity of these Flowers, you may perform the Operation in a Sand Furnace, by putting the Matter into a Retort, fitting to it a Receiver, and proceeding with gradual Fire, as you do in the Preparation of *Ens Martis*. *Flor. Reg. Antimon.*

If you make this Medicine of the Flowers of *Regulus*, it will be milder than that made of crude Antimony, because much of its foul Sulphur is evaporated in the Preparation of the *Regulus*. *Antimon. resuscitat.*

If you mix ten Grains of the finer sort of this Preparation with one Ounce of white Sugar-candy in impalpable Powder, and will make them up into a Mass, you may divide them into an Hundred Pills; and one, two, or three of these will work gently by Stool and Vomit. The Mucilage of *Gum. Tragac.* is proper to make up the Paste. *Dr. B's. Panacea Antimon.*

Reduce the Antimony into most subtil Powder, and see that the Capital Lees and Vessel be clean, and you cannot err in this Operation. *Panacea; Sine igne.*

Butyrum
Antimo-
ni.

When you mix the Sublimate with the Antimony, muffle your self for a Defence against the Steam of the Sublimate; and also carefully avoid the Fumes of the Butter when you change the Receiver.

Mercurius
Vita.

If you have a Pound of *Butyrum*, put not above four Pounds of Water to it for the first Ablution: Stir it often with a clean wooden Spatula to break its Coagulum; then let it stand to settle, and carefully pour off the Water, of which by Rectification is made the Philosophic Spirit of Vitriol.

Bezoard.
Mineral.

Lute not on the Receiver, till the violence of the Fumes are over, lest when the Fire augments its Motion, it break the Retort or Receiver. Do not exceed the third Degree of Fire, nor let it stand long in after the Spirit of Nitre is drawn off, to prevent discolouring the *Bezoardicum Minerale*. The Spirit of Nitre being now impregnated with the Spirit of Common Salt which was in the *Butyrum* is become an *Aqua Regia*, and will dissolve Gold, and is call'd *Spiritus Nitri Bezoardicus*.

The

The Sand is mix'd with the Antimo-^{Ol. Ant.}ny and Sugar, to hinder the matter ^{cum Sac-}from boiling over, which it would be ^{charo.}very apt to do without the Sand; if you would have it freed from its Em-pyreum, and fit for internal use; weigh the Oil and Spirit, and put to it a third part its weight of *Spiritus Nitri Dulcis*. Set it in a Matraass, upon warm Sand, in Digestion four or five Days, then put it into a long bodied Retort, or Cucurbit, with its Head and Receiver; Lute the joints, give gradual Fire to the third Degree, which keep till it leaves dropping; then put up the Spirit for use.

It is accounted an excellent Remedy against all intermitting Fevers, especially Quartane.

Its *Operation* is gently Emetic, and Cathartic.

Its *Dose* is from five to fifty drops.

As the Liquor evaporates in boiling, ^{Essentia}take care to supply it with clean warm ^{Antimo-}Water till it is fit to be Filtred. ^{nii.}

*Tinctura
Antimon.*

If you would produce this Tincture in less time than the Process directs, let it stand in such a Heat as will keep the Spirit of Wine simmering five or six Hours, and the Tincture will be extracted.

In the place of two Ounces of Copper, if you put two Ounces and an half of the *Scoria* of Copper (which the Brasiers call *Spill-dust*,) you will have a more glorious Tincture.

Some are of Opinion; That the Emetic Quality of Antimony is not to be so far destroy'd by any Preparation, but that it will return again when it has been kept for some time, or expos'd to Air: But I have kept several of the foregoing Preparations, and especially the Tinctures, many Years without any sensible alteration.

C H A P.

CHAP. X.

Of Lapis Calaminaris.

IT Dries, Binds and Cleanses, fills Ulcers with Flesh, and is a good Opthalmic; it incorporates with Copper, and makes Brass: It is found in the *North Parts* of Germany, in the *North of Wales*, and in the *West of England*. Internally it is not much us'd; although it affords one of the best Emetics and Diaphoretics commonly known.

Preparations of Lapis Calaminaris.

The Magistery of Lapis Calaminaris.

TAKE four Ounces of *Lapis Calaminaris*, beat it into fine Powder; put it into a Matrafs, and pour upon it one Pound of Spirit of Salt; let them digest upon warm Sand forty eight Hours; filter the Dissolution, and precipitate the Magistery with Spirit of Urine; free it from its Salts by several Ablu-

Ablutions ; dry it gently, and keep for Use.

Its *Operation* is Emetic and Cathartic, and is us'd in all Cases wherein Antimonial Emetics are proper.

Its *Dose* is from three to eight Grains.

Diaphoretic Calaminaris.

BE A T four Ounces of *Lapis Calaminaris* into fine Powder ; put it into a Matrafs (which place in a Chimney) and put to it (by three or four Ounces at a time) one Pound of Spirit of Nitre ; let it stand cover'd from Dirt falling into it twenty four Hours ; then decant the Liquor, which put into a Retort ; set it in a Sand Furnace, and give it gradual Heat to the third Degree, and so keep it till no Drops fall from it. When all is cold take it out of the Retort, and keep for Use.

It is a good Sudorific, and answers the Purposes of Antimonial Diaphoretics. It is also an excellent Collyrium ; one Ounce of it being infus'd twenty four Hours in half a Pint of white Wine, and

and a drop or two of that Infusion put into the Eye, three or four times a Day.

Its *Dose* is from ten Grains to half a Dram.

Observations.

LET the Spirit of Salt be rectify'd, *Magister.*
because in the first Destillation *Lapis Cal.*
there is mixt with it a foul Sulphur or
Flower, which may discolour the Ma-
gistry.

Some Persons will wash the Diapho- *Calamin.*
ret. when taken out of the Retort; o- *Diapho-*
thers will put to it three times its *ret.*
weight of Tartariz'd Spirit of Wine,
and let it stand in Digestion twenty
four Hours, shaking it often, and then
let it simmer one Hour, and when cold,
pour off the Spirit of Wine, and dry
by a gentle Heat the Diaphoretic,
which they keep for Use.

It is a good Diaphoretic.

Its *Dose* is from ten, to forty or fifty
Grains.

C H A P. XI.

of VITRIOL.

AT *Friburg* in *Germany* they take the *Ore*, out of which *Brimstone* hath been melted, and burn it again in open *Air*, then putting it into a large *Fat*, they pour *Water* upon it, so as to imbibe and drink in the *Vitriol*; this *Water* is afterwards boiled to a sufficient heighth, and let out into *Coolers*, where *Sticks* are set in it, as in the making of *Sugar-candy*: the purest *Chry-staliz'd Vitriol* sticks to the *Wood*, the rest to the sides and bottom. *Vid. Dr. Brown's Travels*, p. 170, 171.

Of *Vitriols* we have six sorts Vendible among us (*viz.*) *Hungarian*, *Dantzick*, *Roman*, or *Cyprus*, *English* and *German*, and likewise *White Vitriol*. It is said they are all compos'd of an *Acid Salt*, and *Sulphureous Earth*; but it is most certain that there is a *Proportion* of *Metal* in them, as it evidently appears by rubbing *Dantzick*, *Hungarian*, *Roman*, and *White Vitriol*, upon the *Blade* of a *Knife*, which they will leave tinged

ged of a Copper Colour. And in *London*, it is well known, that most of the Old Iron which is gather'd by many poor People, is sold to the Copperas-Houses at *Rotherhith* and *Deptford*, which they boil up with the Dissolution of the *Marchasite Pyritis*, or *Fire-stone*.

In Colour the *Hungarian* and *Dantzick* are Green, but the first is the deeper: The *Roman* or *Cyprus* is Blue; the *English* is yet of a paler Green than either. The *White* takes its Name from its Colour. There is also a Red Vitriol, which is that of *Germany*, and yet of no great Use among us. It is suppos'd to be a Green Vitriol, Calcin'd by a Subterranean Heat.

The Purification of Vitriol.

ALL *Vitriols* are made pure by Dissolution, Filtration, Evaporation and Coagulation, or Chrystallization. If you will purifie them to the height, you must so often Repeat the Operations, that by ten Days Digestion between each Dissolution, there will settle no Fæces.

Cal-

Calcination of Vitriol.

PUT what quantity of *Green Vitriol* you please into an Earthen Pot; make a gradual Fire under it, and as it heats, it will dissolve; continue the Fire, and increase it, till the Liquor is again coagulated, and the Mass of a greyish Colour.

This is *Calcin'd Vitriol*, fit for some Uses: But if you design it for the *Destillation* of its Oil, or for *Calcanthum Rubefactum*, you must continue it in a strong Fire, till it is very red.

It is us'd to stop Blood, being apply'd to the Wound.

The Destillation of Oil and Spirit of Vitriol.

BEAT the *Colcothar* to Powder, and sift it through a coarse Hair Sieve, then put into those Pots call'd Long-Necks, five or six Pounds a piece of *Calcin'd Vitriol*, and place them in a Reverberatory Furnace; lute on the Receivers, with Lutes made of Clay, Sand

Sand, and cut Flax; then make a small Fire under the Grate, with Charcoal and Smallcoal; stop the Fire-hole of the Furnace, and the Ash-hole slightly: let the Fire smother so six or eight Hours to dry the Furnace and Junctures of the Receivers: Then put the Fire upon the Grate, and keep it in the first Degree six or eight Hours; increase it to the second, four or five Hours, and so to the third, which will raise white Clouds into the Receiver; continue it so long as you see white Clouds come over; when they begin to abate, augment it to the fourth Degree in its Extremity, and continue it till the Vitriol emits no Fumes.

Then let all cool, and carefully take off the Receivers, and put the Destillation into a Retort, which place in a Sand Furnace; fit a Receiver without luting; make a gentle Fire; which will raise a little insipid Phlegm, which has a Sulphureous Smell; put that into a Vial, and stop it. Put on the Receiver again, and continue the second Degree of Fire, and so pass on to the third, which continue till Fumes rise into the Receiver, and you perceive the Oil in the Retort to be clear and white: as
There
Rock

Rock-water : Then let all cool, and put the Spirit by it self, and the Oil left in the Retort by it self also.

The Sulphureous Spirit is given in Palfies, and Diseases of the Lungs. The Spirit is commonly mixt with Julaps. In *Physic* the Oil is of the same Use as that of the Spirit, in an eighth, or tenth part the Dose.

Gilla Vitrioli, commonly call'd, Salt of Vitriol.

Dissolve what Quantity of white Vitriol you please in warm Fountain Water, Filter it, and let it stand warm twenty four Hours to settle its Faces : Decant it off from the Sediment, and evaporate it to a Pellicle in an Earthen Pan. If you see still some yellow Faces at the bottom of the Pan, pour it out into a clean Vessel, by gentle Inclination, and set it two or three Days in a cold place to shoot into Chrystals.

Its Operation is Emetic.

Its Dose from ten Grains to one Dram.

There

There is a Salt extracted with warm Water out of the *Caput Mortuum* of the Oil of Vitriol, which is very little (if at all) in Use.

The Compound Cathartic Salt of Vitriol, and its Sulphur.

Dissolve what Quantity you please of Common Martial Vitriol; Filter the Dissolution, and put it into a Matraass, set it in Digestion fifteen Days; if any Fæces fall in that time, carefully decant the Liquor from them into a clean Vessel, and drop into it as much Oil of Tartar, as will Precipitate all its Sulphur, which you will see fall into a brown Powder. Let it settle, and pour off the clear Liquor. Evaporate it to a Pellicle, and set it by in a cold place to shoot into Chrystals.

The Operation of the Chrystals is Cathartic and Diuretic.

Its Dose is from ten Grains to two Scruples, or one Dram. It is a very Aperitive and Cleansing Medicine. The
L Sulphur

Sulphur is the same with that of *Mars* before-mentioned.

Aqua Stiptica.

TAKE *Colcothar*, burnt Allum and Sugar-Candy *ana* one Dram, Urine of a sound Person, and Rose-water *ana* one Ounce; Plantan-water four Ounces; grind all well together in a Mortar till it is without the least Lump; then put it into a Matraass, and let it stand in Digestion twenty four Hours; let it settle, and pour it from the Faces. If you would have it more *Stiptic*, put one Dram of the Liquor left after the last shooting of *Sal Chalybis*, or *Vitriolum Martis* to it.

Spiritus Vitrioli Dulcis.

PUT into a Matraass, Spirit of Wine two Pounds, and pour into it one Pound of Oil of Vitriol, by an Ounce at a time; fit and lute on a Head and Receiver; kindle the Fire, which increase gradually to the third Degree, till no Drops fall from the Nose of the Head; then

then take it from the Fire, and put what is Destilled into a Vial well stopd.

Some will return the Spirit upon the Black Matter left in the Body, and draw it over again; and so do three or four times till nothing is left but a dry black Crust.

Its Operation is Diaphoretic and Diuretic.

Its Dose from twenty to an hundred Drops, in a large quantity of Liquor.

The Diaphoretic Spirit of Vitriol.

TAKE of Salt of Tartar and burnt Hart's-horn ana two Ounces; put them into a Matraass, and add to them, by little and little, half a Pound of the foregoing *Spiritus Vitrioli Dulcis*; set the Mixture in a Sand Furnace, fit to it a Head and Receiver, lute well the Junctures, and draw it off to a dry bottom, in a Fire of the Second Degree; then take off the Spirit, and put to it Saffron and Cochineal ana one Ounce, *Virginia Snake-root* half an Ounce, stop the Vessel well; set it upon warm Sand to digest twenty four Hours, sometimes

L 2. shaking

shaking it; afterwards let it settle, and keep it in a Vial well stoppt.

Its Operation is Diaphoretic and Diuretic.

It is given in all Fevers, and even in the Plague it self, with good Success: Also in Dropsies and the Jaundice. It powerfully opens Obstructions, and cleanses the Lungs.

Its Dose is from thirty to one hundred and twenty Drops.

The Medicinal Stone.

TAKE common Green Vitriol half a Pound, and the same quantity of White Vitriol, of Allum twelve Ounces, Anatron or Sandiver, and common Salt *ana* one Ounce and a half, Salt of Tartar two Ounces; beat them grossly, mix them with four Ounces of Vinegar, and put all into an Earthen Pan, which will contain three times their quantity; set them in a Fire to melt, and stir them often; when they begin to thicken, mix diligently of *Venice Ceruss* four Ounces, and of *Armenian Bole* two Ounces, both
in

in fine Powder; keep them in the Fire, continually stirring till they grow hard; then let all cool, break the Pot, and put up the Stone for Use.

It fastens Teeth, preserves the Gums, heals and dries up Ulcers and Wounds, and is also us'd in Injections, and Eye-Waters.

The Sympathetical Powder.

TAKE good *English Vitriol*, such as we call *Bow-Copperas*, purifie it as before directed, by two or three Dissolutions, Filtrations, and Chrystallizations; set those Chrystals in a clean Pan in the Sun, either of *June*, *July*, or *August*, so long till they are calcin'd to Whiteness; when one side is calcin'd, turn the other, and in a few Days the Chrystals will crumble into Powder; if they do not, you may beat, and expose them again to the Sun, stirring them three or four times every day: At last beat them into very fine Powder, and again set them in the Sun, stirring as before, for two or three Days more, in which time they will be very White: Then take in the Matter while the Sun

shines hot upon it, and keep it from the Air in Glasses well stop't, and in a dry Place.

It is a Mild, but Powerful *Stiptic*, always successfully apply'd in the stop-
ing of Blood, either at the Nose, or Wounds, and, where there is no Fracture of the Bone, will heal.

The Royal Stiptic.

UPon four Ounces of Sympathetic Powder, inuse half an Ounce of good Oil of Vitriol; stir them well in a Glass Mortar, with a Pestle of the same, and let them stand twenty four Hours on warm Sand, in a wide mouth'd Glass; grind this Mixture again with a little Spirit of Wine, and put it into a Matrafs; pour upon it more Spirit of Wine, to make that already us'd, a Pint. Lute it well, and let it stand forty eight Hours in Digestion, often shaking it; then let it stand to cool and settle, and decant the Spirit of Wine. which keep well stop't. Remove the Cucurbit or Matrafs, into a Sand Furnace; lute on its Head and Receiver, and drive over the Helm; and that will rise in the third Degree,

Degree, which also keep by it self; let all cool, and take out what is left at the bottom, powder it and put it into a Cucurbit pour upon it Destill'd Rain-Water one Pound; set it on warm Sand forty eight Hours, and shake it often; then let it settle, decant, and keep it for Use.

The Impregnated Spirit and Water may be us'd apart, or mix'd; and if you would add strength to the Mixture, you may put some of the Acid Spirit drawn off, after the Spirit of Wine was decanted: But if you would make the best *Stiptic Powder*, put equal Parts of the Impregnated Spirit of Wine and Water, and evaporate to Dryness.

It is both a *Powerful Stiptic*, and one of the best *Vulneraries* in the World.

A Stiptic Water with Mars and Vitriol.

Dissolve one Pound of common Roman Vitriol, and precipitate its Oker with Oil of Tartar *per deliquium*; when it is settled decant the Liquor,

and dry the Powder in an Earthen Pan over a gentle Fire. Take of this dried Powder, and Filings of Iron of each four Ounces; mix them well, and put them into a wide-mouth'd Glass; pour upon them (by one Ounce at a time) three Ounces of Spirit of Nitre; then add two Ounces of Oil of Vitriol, by half an Ounce at a time. Stir them well, and gradually pour upon them ten Ounces of Spring Water. Let all stand in a gentle Heat forty eight (stirring them every twelve) Hours. When settled pour off the clear Liquor, which is a very good and indolent Stiptic.

Observations.

Calcinat.

IN the Calcination begin with a very gentle Fire, till the Vitriol is melted; then increase leisurely, till it begins to Crust about the sides of the Vessel; otherways you may crack the Pan, and the Liquor will run out; but after it is Coagulated about the sides of the Pan, you may increase the Fire boldly.

Destillat.

If the Vitriol be only Calcin'd to greyness (as some direct) it will coagulate in the Pots, and become a hard Mass,

Mass, so that the Fire (though never so Vehement) is hindred from acting upon its Particles, by the Compactness of the Matter, and will never raise the full Strength of the Spirit in twenty Days time; therefore it ought to be calcin'd to Redness, and beaten into Powder, and put into the Pots before it attracts Air.

The *Gilla*, or (what we call) Salt of *Gilla* *Vi-*
Triol, ought to be dissolved in no more *tri.*
Water than will keep it from Chrystal-
lizing whilst it stands to settle, *viz.* two
Pounds, or two Pounds and a half of
Water to one Pound of Vitriol, and that
filter'd while it is warm.

The long Digestion is to make the *Cathartic*
more gross Metallic Part settle to the *Salt of*
bottom; the better it is separated from *Vitriol.*
that Metallic Part, the less Emetic, and
more Cathartic it is rendred. The Pre-
cipitate Matter, must by many Abluti-
ons, be rendred tasteless, and gently
dried.

The Liquor left after the shooting of *Stiptic*
Vitriolum Martis, is both more *Water.*
and Vulnerary (by its Impregnation
with the Sulphur of *Mars*) than the
Oil of Vitriol is of it self.

If

*Spiritus
Vit. Dul-
cis.*

If you cohobate the *Spiritus Vitrioli Dulcis*, upon the black Residue left in the bottom of the Retort, it exalts its Virtue.

*Diapho-
ret.
Spirit of
Vitriol.*

Let the Salt of Tartar be clean, and the Hart's-Horn well burnt, and put not above one Ounce of the Dulcify'd Spirit of Vitriol to the Salt and Calx at a time.

*Lapis Me-
dicament.*

The Vessel in which you make it must be three or four times bigger than will contain the Ingredients, by reason of the great Ebullition which will arise from the mingling of the Acid of Vitriol, and Destill'd Vinegar, with the Salt of Tartar, and Calx of Lead; but especially when you put in the *Ceruss*, you must do it warily, and keep it down by continual stirring.

*Sympathe-
tical Pow-
der.*

You must so expose it to the Sun, that the Rain may not fall upon it, lest it should wash it away. Some think it sufficiently Calcin'd in six or seven Days, exposing it only six or eight Hours in a Day; but it has been observ'd, That it is better perform'd by giving it thirty or forty Days Sun.

I have known some direct the putting of Destill'd Vinegar to the Dissolution of Vitriol, to cause a Precipitation, but I could never find so great a Disagreement between them as to be capable to effect it. I fear such have either wrote after others, or foisted in their own Conceits, without consulting an Elaboratory, and it has cost me much time and Money to follow them to no Purpose.

C H A P. XII.*Of Sulphur, or Common Brimstone.*

IT is brought to us from *Italy*, and some of the *West-India-Islands*, being generated of a Fat, Resinous Substance, full of an Acid, Vitriolic Spirit, as appears by its Spirit made with a Glass Vessel, resembling the Shape of a Bell, from which it takes the Name of *Spirit of Sulphur per Campanam*, differing very little from that of Vitriol.

We

We have it in three Forms, *viz.*

First, Sulphur Vive, which comes to us as it is dug out of the Earth, and valued at the dearest Price of the three, for no other Reason, but that it is less Vendible than the other.

Secondly, Mineral Rough Brimstone which by melting is separated from a great deal of Insignificant Earth, which the Sulphur contained.

Thirdly, That cast into small Rolls, commonly sold by Grocers and Chandlers, which is said to be mix'd with Rosin, or some other Bituminous Substance, and by Experience to be the worst sort for the making either Flowers or Oil; the rough Mineral Brimstone is best, for the aforesaid Uses, as having less Earth than *Sulphur Vive*, and not being mixt with any Heterogeneous Particle.

Pre-

Preparations of Sulphur.

Flowers of Sulphur.

TO make this to any Advantage, it must be Sublimed in an Arch'd Room, instead of a Glass or Earthen Receiver, and one, two, or three Hundred Weight (according to the Magnitude of the Room) may be put in at a time. You must have a great thick Iron Pan, called a Tampin, to put the Sulphur in, which must be placed immediately over the Grate, and about a third part of the Diameter of the Tampin left open above its brim, to suffer the Fumes to come into the Arch where they Condense into Flowers: The Arch ought to be at least eighteen, or twenty two Inches thick; and that Cramp'd together with Iron, to resist the Force of the Fumes.

If you design your Furnace to Sublime one hundred Weight of Flowers at a time, your Pan must be capable of holding one hundred and a quarter; your Arch five Foot high, three Foot broad, and five Foot long; and its inside and floor to be set with glaz'd Tiles:

Tiles: In the end, or side of the Furnace, you must have a Door, which must be two Foot square; it must be strongly Barricado'd, and a little Hole in it of a quarter of an Inch Diameter, which must be exactly stop'd with a Plug, by which you may know when all is Sublim'd: For when you think the Operation is almost at an end, pull out the Plug, and if the Fume come not forcibly out, the Operation is over, but if you find a strong Fume, with some Noise, continue the Fire till all is over.

Then let it cool twenty four Hours, before the Door is open'd; and then go in, and with a Wing, or clean Brush, wipe the Flowers into a heap, and take them out for use.

It may be made in less quantity in Vessels of another Form: A Description of both you will see in the Plates at the beginning of the Book.

It is a good Pectoral Medicine, and us'd in other Physical Preparations.

Its Dose from ten Grains to a Scruple.

The

The White Flowers of Sulphur.

TAKE of Salt Petre fix'd with Charcoal (as hereafter) half a Pound, or but four Ounces; of clean Mineral Sulphur, twice its quantity, grind and mix them well together, then put them into a Retort, and set it in a Sand Furnace; fit to it a Receiver, but lute it not; make a gentle Fire under it, which gradually increase to the third Degree, and so keep it till all the Flowers rise; which you will know by the upper Part of the Retort above the Sand, being clear.

The Use and Dose is the same with the other. But some are of Opinion that these far exceed the other Flowers in Virtue.

The Milk of Sulphur.

TAKE clean Salt of Tartar one Pound, of Flowers of Sulphur six Ounces (some use but four Ounces) grind them well together in a Stone Mortar; then put them into a strong Earthen Pan, and add of Fountain-Water

ter eight Pound : Set this Mixture over some live Coals, and by degrees make it boil, till the Liquor is very red, which will require three or four Hours: (as the Water wastes, supply it with new warm Water) Take it from the Fire, and before it is quite cold Filter it; then drop into it Destill'd Vinegar, which will cause the red Liquor to be muddy, and a white Powder will precipitate; when the first Precipitation is fall'n, drop in more Vinegar, and so proceed till you see the Vinegar will not make the Liquor muddy any more. After this, let all settle, and by gentle Inclination pour off the Liquor; put Fountain-water to the Magistery; stir it well about, and let it settle; pour it off as before: and so proceed with six or eight Lotions, till the Powder is Insipid, and free from its Urinous Taste.

Its Operation is the same of the Flowers.

Its Dose from one Scruple to one Dram.

The

*The Milk of Sulphur, with Quick
Lime.*

TAKE one part Sulphur, and two parts of Quick Lime; Grind them well together, put them into an Iron Kettle, with six Quarts of Water to every three Pounds of the Mixture, and boil it till the Liquor be as red as Blood; strain it (whilst it is warm) into a Vessel, either of Glass or Earth, and let it stand to settle: What is not very clear Filter; but if it be clear, decant it into a glass Vessel, and drop into it some warm Urine, which will precipitate the Dissolution: Wash it, as you did the former, and it answers to the same Purposes.

Balsam of Sulphur, with Oil of Olive.

TAKE of the Flowers of Sulphur four Ounces, Sallad-Oil one Pound; put them into a Pipkin which will contain about three times their Quantity; Set them over a Fire, and make the Matter to boil gently; keep it continually stirring with a wooden Spatula, for the space of an Hour and an half,
M till

till it is quite cool, and put it up for Use.

It is given in Coughs, Colds, Astma's, and Wheesings, Phthifics and Consumptions: And Externally to heal and dry Ulcers: It eases the Pains of the Gout.

The Dose from ten to forty Drops.

Balsam of Sulphur, with Oil of Turpentine.

Take four Ounces of Flowers of Sulphur, and one Pound of Oil of Turpentine; Place the Mixture in a Sand Furnace; stop the Matraiss loosely with another Glass; give a small Fire for one Hour, then increase it till the Oil boils gently, in which degree keep it three or four Hours; Then let it cool, and pour off the Impregnated Oil from that which is not dissolved.

It is a Nauseous, but an excellent Medicine for the Ulcers of the Lungs.

Its Dose from five, to fifteen, or twenty Drops. The

The Balsam of Sulphur, made with Oil of Anniseed, is perform'd after the same manner, and is more grateful to the Palate; also that with Oil of Amber, Juniper, &c.

Balsam of Sulphur with Linseed-Oil.

PUT four Pounds of Linseed Oil into an Earthen glaz'd Body, set it in a Sand-heat till it boil gently; then add one Pound of Flowers of Sulphur; stir it till it swells and subsides; then remove it from the Fire, and when cold, pour upon it five Pounds of Tartariz'd Spirit of Wine; mix them well and put them into a Glass Body, and by a gentle Fire in a Sand Furnace draw off the Spirit of Wine. When the Balsam is cold, put it into a Bottle for Use.

The Use and Dose the same with the other Balsams of Sulphur; but this is most grateful.

M 2

Balsam

Balsam of the Bulphur of Mars.

Take the clean Filings of Iron, or broken Needles, one Pound; put them into a Cucurbit, with Spirit of Salt five Pounds; let it stand in a Digestive Heat five or six Days; in which time the Iron will be almost dissolved; filter and remove it into a Glass Retort; place it in the Furnace, with a great deal of Sand about it; give Fire of the first Degree for one Hour, augment it to the Second, which continue till you cannot perceive any more Drops to fall: Then change the Receiver, and increase the Fire to the third Degree for one Hour, and so pass on to the Extremity of the Fourth, and keep it there four or five Hours, in which time you will have red Flowers ascend into the Neck of the Retort, and some yellow Spirit come into the Receiver. Let all cool, and remove the Vessels. In the Receiver you will have about four Ounces of a yellow Spirit: And (if you have proceeded Regularly) about four Ounces of foliated red Flowers in the Neck of the Retort. Take of the Flowers three Ounces, of the yellow Spirit one Ounce; put them into a Matrafs; infuse

infuse upon them eight Ounces of Oil of Turpentine ; let them digest upon warm Sand twenty four Hours ; then augment the Fire, so as to make the Matter simmer for two Hours : Let all cool, and put it carefully from the Fac-ces for Use.

I have heard it affirm'd to be one of the best Vulneraries in the World, and seen wonderful Effects of it, both Internally and Externally.

It is given in all Distempers of the Breast and Lungs, the Stone, and Ulcers of the Reins : and all other Internal Ulcers whatever. It also cicatrizes and heals External Ulcers.

Its Dose is from ten, to fifty or sixty Drops.

Liver of Sulphur.

TAKE Flower of Sulphur four Ounces, pure Salt of Tartar two Ounces ; mix and melt them in an Earthen Dish ; keep them stirring till they are as red as Blood, without any white Specks. Take it out of
M 3 the

the Dish, and put it into a Glass and stop it close.

Of this is made the Tincture, Syrup, and Vulnerary Balsam, as followeth.

The Blood of Sulphur.

GRind four Ounces of Liver of Sulphur; and two Ounces of Oil of Tar very well in a Mortar; put them into a Matraass, and pour upon them twelve Ounces of Sweet Spirit of Nitre; shake the Matraass, then stop it close, and let it digest seven or eight Days, When cool, decant the Liquor for Use.

The Dose from five to sixty Drops, mixt with a little Syrup, and drank in Canary, Malaga, or Ale.

It is Pectoral, Carminative, and Diuretic,

Tincture

Tincture of Sulphur.

BEat four Ounces of the Liver of Sulphur (while it is warm) in a warm Mortar; put it presently into a Matrafs; put one Pound of Spirit of Wine to it; set them in a Digestion twenty four Hours, and you will have a very red Tincture, which put up in a Vial stopt for Use.

It is given in all Distempers of the Lungs, and said to be a Preservative against Contagious and Pestilential Air.

Its Dose from fifteen to twenty five, or thirty Drops.

Another Tincture of Sulphur.

TAke of Philosophical Soap (made with Oil of Turpentine and Salt of Tartar) four Ounces; mix well with it one Ounce of Balsam of Sulphur; put them into a Matrafs, and pour upon them, one Pound and a half of Tartariz'd Spirit of Wine, make a Circulating Vessel of your Matrafs, and let it digest

M 4

twenty

twenty four Hours in a gentle Heat.
When cool, decant the Tincture.

This is esteem'd a more Pectoral
Tincture than the other, tho' the Dose
is the same.

A Vulnerary Balsam of Sulphur.

TAke of *Hepar Sulphuris* four Ounces,
of *Aloes Succatrine* one Ounce and
a half, and of *Myrrh* one Ounce, all in
fine Powder; put them into an Earthen
Pot, and pour upon them one Pound of
Balsam of Turpentine, with two Drams
of Saffron; set them over a gentle Fire
in Sand, which increase by Degrees,
till the Oil simmer, and the Ingredients
are dissolved; then let them cool, and
strain the Balsam through Flannel, into
a Glass, which keep for Use.

It is said to be one of the best of
Balsams for the Cure of Wounds and
Ulcers.

Oil

Oil of Sulphur by the Bell.

IT is made of the yellow Mineral Sulphur: There is requir'd to this Operation two Wooden Frames, one Earthen Dish, with a Hole in the middle, a flat Gally-pot, an Earthen Porringer, to burn the Sulphur in, a wide-mouth'd Glafs for a Receiver, and the Bell, or *Campane* Glafs.

Set one of the Wooden Frames upon two Bricks, and put the Dish, with the Hole in its middle, upon it, and the flat Gally-pot in the middle of the Dish, with the bottom upwards, upon which set the Porringer which contains the Sulphur. Support the second Wooden Frame, upon two Bricks more, as you did the First, in which Frame a Hole must be made, fit for the Bell Glafs to rest in, so that the Edges of the Bell be clear of the Wood.

When the Porringer (charged with Sulphur) is fitted, set the Sulphur on Fire, with a red hot Iron; when it is all melted, stir it with a clean Tobacco-pipe, or Iron-wire, to make it burn clear; then cover it with the Bell, and in three or four Hours time you will perceive

perceive the Oil to condense about the sides of the Bell, and drop into the Dish, and so into the Receiver.

When you perceive the Sulphur to burn dull, take off the Bell, and stir about the Sulphur with an Iron-wire, as before: then set the Glass again, and so proceed till you have as much Oil (or rather Spirit of Sulphur) as you desire.

Its *Operation* is Diuretic, and it is given in Julaps, to give 'em an agreeable Acidity to qualify the Heat in continued Fevers: Some ascribe greater Virtues to it, than is given to Oil of Vitriol; but I never could distinguish any Difference more, than that one is the Vitriolic Spirit in Sulphur, and the other the Sulphureous Spirit of Vitriol.

Salt of Sulphur.

PUT four Ounces of *Sal Polychrestum*, (Prepared as hereafter in the Chapter of *Nitre*) powder it in a Glass Mortar, with a Pestle of the same, put it into a flat wide mouth'd Glass; and put to it two Ounces of Spirit of Sulphur; stir them well together with

a clean Tobacco-pipe, and set them in a gentle Heat of Sand to Evaporate; you will have a pleasant Acid Salt, which put up in a Vial for Use.

Its Operation is Diuretic and Cathartic.

Its Dose from one Scruple to one Dram and a half, in Broth, or any proper Vehicle. I have known it given to five or six Drams, and then it has given four or five Motions *per inferiora*; as most Salts will.

Observations.

THE yellow rough Mineral Brim-
stone is best for this Operation; *Flowers of Sulphur.*
you may have it at the Refining-Brim-
stone-House in Petticoat-Lane. For the
first twelve or sixteen Hours, give a
gentle Fire, so much as to make the
Fumes rise, but not to boil over.

You may make use of Salt of Tartar, *White*
and Nitre powder'd, mixt and melted *Flowers of Sulphur.*
in a Crucible, instead of fix'd Nitre, or
Salt of Tartar; but you must not put
into the Crucible above a Spoonful at a
time

time, as you will see in the Chapter of Tartar.

Milk of Sulphur.

You ought to make the Precipitation in some place, where the Noisome Scent has a good Convenience, either in a large Chimney, or in the open Air; for though it is not dangerous, yet it is very Offensive.

Balsam of Sulphur, with Sallad Oil.

The Vessel ought not to be fill'd above one third, lest it should boil over, and take Fire with violence, and put you in Confusion. Have also a fit Cover to the Vessel ready, that you may smother it, if it should take Fire within the Pipkin.

Balsam of Sulphur, with Oil of Turpentine.

This ought to be placed in a Chimney, because the Steam which comes from it, is as offensive, as that in the Precipitation of Sulphur.

Martial Balsam of Sulphur.

This might have been placed with the Martial Preparations, but being a Sulphur, and of the Nature of these Medicines, I have given it here.

The Liver of Sulphur.

This Operation ought to be perform'd in a Chimney: you must keep it, after it is melted, continually stirring,

ring, till it is red as Blood, and have a Cover ready to stifle the Flame if it should take Fire.

You ought to make the Liver of Sulphur into fine Powder, in a warm Mortar, and put it into the Matraass as warm as possibly you can, before it attracts any Air; then presently put the Spirit of Wine to it, and fit a Glass to the Mouth of the Cucurbit, Lute the Joint well, and set it to digest.

The Pot in which you make this Balsam ought not to be fill'd above a third part; carefully stir it when it begins to heat, lest it should boil over, and take Fire, which it is apt to do; have a Cover, and wet Cloaths ready against such an Accident.

After the Sulphur burns clear, and the Bell set over it begins to work, it will burn, and work well for five or six Hours, when the Flame begins to decrease, take off the Bell, and place it upon an Earthen Dish (which you must set by the Frame for that purpose) put in more Sulphur, and when it is all on Fire, stir it with a clean Pipe, and put on the Bell again; and so continue till all

all the Sulphur you design for Spirit be burnt.

Salt of Sul. This is not really the Salt of Sulphur, but Nitre fix'd by Sulphur, and afterwards Impregnated with its Spirit.

CHAP. XIII.

Of ARSENIC.

IT is a Juicy Combustible Mineral Substance, consisting of Sulphur, and Corrosive Salts; of which there are three sorts, viz. *Yellow Arsenic*, called *Orpiment*; *Red Arsenic*, called *Sandarach*; and the *White*, properly called *Arsenic*. It is made of the Red, by mixing equal parts of *Sandarach*, and *Common Salt*, and Subliming them together.

The *White* is most us'd in Physic, the *Yellow* less, and the *Red* very little. It is one of the most Pernicious of Poisons, and so great an Enemy to the Balsam of Life, that it produceth strange Symptoms, as Convulsions, Swoonings, Gripes, Vomitings, Palpitation of the Heart,

Intolerable Heat and Thirst, with
Mortification of the part where it comes.

Preparations of Arsenic.

To Sublime Arsenic.

THE common way is to mix equal Parts of Arsenic and Salt decrepitate, in fine Powder; put them into a Matrafs, in a Sand Furnace, within a Chimney, stopping the Mouth of the Matrafs loosely with Cotton, or Paper; make a gentle Fire, which increase gradually to the third Degree, and so keep it till all is Sublimed: six or seven Hours time will be sufficient to raise the Mixture of half a Pound each. This you may repeat as often as you think convenient, every Sublimation separating the light Flowers, and taking only the CrySTALLINE part. This Sublimation cleanses it, but in my Opinion makes it the more Corrosive, by carrying up some of the Sharp Spirit of Salt with it.

To

To Sublime Arsenic for Physical Use.

TAKE of the aforesaid Sublimate one Pound, put it into a Crucible ; set it in a melting Furnace, in such a Fire as will just keep it melting, where continue it for two Hours, in which time a great deal of the most Corrosive Poisonous Part will be exhal'd.

Let it cool, and that which remains in the Crucible make into Powder, and grind it with equal its weight of fine Filings of Iron ; set them in a Sand Furnace to Sublime, as you did before, observing the same Degree of Fire, and space of time, proportionable to the quantity ; Repeat this Operation twice more, every time separating the light Flowers, and then you have a Sublimed Arsenic , pretty well freed from its Corrosive Poison, and fit for farther Preparation : Some have ventur'd to give the Infusion of this Arsenic inwardly, and say it is a great Antidote against Poison.

Its Operation is Emetic and Cathartic.

Its

Its Dose from three to eight Grains,
infused in Wine.

Diaphoretic Arsenic.

TAKE of the aforefaid sweet Subli-
mate of Arsenic, four Ounces;
bring it into fine Powder; put it into a
Retort; put to it twelve Ounces of Spi-
rit of Nitre; set it in a Sand Furnace;
make to it a gentle Fire, which increase
gradually to the third Degree, and so
keep it till no Drop falls from the Nose
of the Retort; let it cool, and take out
and grind the Arsenic again; put it into
a new Retort, and put to it twelve
Ounces more of fresh Spirit of Nitre;
proceed, as you did before, to the third
Degree of Fire; and when you perceive
no Drop to fall from the Nose of the
Retort, increase the Fire to the fourth
Degree, and so keep it for two Hours,
then let all cool, take out the Medi-
cine, which make into a very subtile
Powder; put it into a Matrafs; put to
it Tartariz'd Spirit of Wine half a
Pound; invert a fit Glass into the Mouth
of the Matrafs, Lute well, and let it
stand upon warm Sand twenty four
N Hours,

Hours, often shaking it about; take it from the Sand, let it settle, and decant the clear Spirit of Wine; put to the Medicine half a Pound more of fresh Spirit of Wine, let it stand as before, twenty four Hours, then let it cool, and when settled, decant it; dry the Powder gently, and keep for Use.

Its *Operation* is Diaphoretic.

Its *Dose* from five to twenty five, or thirty Grains.

I remember it to have been oftentimes us'd with good Success in the *Plague*, in the Year 1665.

Regulus of Arsenic.

TAKE Arsenic eight Ounces, Salt of Tartar, made of Tartar, and Nitre, *ana* six Ounces, Filings of Steel four Ounces, Charcoal-dust one Ounce; beat and mix them. and by a Spoonful at a time, put them into a red hot Crucible: when it is in, make a Fire all over it, and let the Matter stand in good Fusion half an Hour, then take it out, and pour it into a warm greas'd Cone, or Mortar, knocking it about the Sides, to make the Regulus settle: you may purifie it as that of Antimony.

There

There is also a *Regulus of Arsenic*, made of Arsenic one Pound, Potashes six Ounces, and soft Soap one Pound; mix, and put them into a Crucible, covered with another that has a Hole in it; and so bring it to Fusion gradually in a Melting Furnace.

Spirit and Butter of Arsenic.

TAKE Arsenic half a Pound, Mercury Sublimate one Pound; mix them well, and put them into a Retort; place it in a Sand Furnace; Lute on its Receiver, and give it gradual Fire, as in the Butter of Antimony, and you will have a thin Fuming Spirit, and a Butter: When all is cold, take off the Receiver; pour the Spirit into a Glass well stop'd: the Butter you must keep by it self.

The Spirit some say, will Radically dissolve Iron: The Butter is a great Caustic.

If you put on a new Receiver, after you have taken off the Spirit and Butter of Arsenic, urge the Fire strongly,

and the Crude Mercury will distil in Drops, which serves for any Use that other Quicksilver can be put to; there is no need of putting Water into the Recipient, the Mercury will Condense without it. And if you desire more Dissolving Spirit, put the Butter and Spirit into a new Retort, and Destil it again: and by repeating that Operation, you will make (almost) all the Butter into Spirit.

Arsenical Magnet.

TAKE of Crystalline Arsenic, Yellow Sulphur, and Crude Antimony, of each three Ounces; These all being made into Subtile Powder, and mix'd, put them into a Retort; Fit a Receiver without Luting, and give it gradual Fire to the third Degree, where keep it three Hours; augment the Fire to the fourth, for an Hour more; then let all cool, and in the bottom of the Retort you will find a Pellucid Mass, of a dark red Colour.

In the time of the *Plague*, 1665. I made this Magnet, and it was much us'd both in Plaisters and Amulets.

A Ponderous Oil of Arsenic.

TAKE Arsenic, and Corrosive Sublimate of Mercury, of each one Pound, powder and mix them well, and put them into a Retort; and place it in a Sand Furnace: keep it one Hour in the first Degree of Heat, two Hours in the second, three in the third, and four Hours (or till no Fumes ascend) in the fourth. When cold you will find in the Receiver a Sublimate, a Spirit, and a ponderous black Oil, which will not mix with the Spirit. Rectifie them in a clean Retort, and the Oil and Spirit will come clear, but not incorporate. Return the Spirit and Oil upon the red Mass remaining in the first Retort, and Destil them again in Sand, and you will have a much more ponderous Oil than the former.

For this Process I have receiv'd the Thanks of a great Pretender to Alchymy, with an account of what Wonders he could work with it.

To Fix Arsenic.

POwder and mix one Pound of pure white Arsenic, and two Pounds of Nitre; put them into a Retort, and pour upon them two Pounds of Oil of Vitriol: Place the Retort in a Sand Furnace, fit to it a large Receiver, and for the three first Hours give it a gentle Heat; then increase the Fire till the red Fumes are near spent: Lastly, let it stand in the fourth Degree of Heat, till neither Fumes nor Drops appear. When it is cold, you will find a Milk-white Mass (well fix'd) in the bottom of the Retort. If you would have it more fix'd, powder it, and return it into a Retort with the Spirit of Nitre you drew off, and one Pound of Rectify'd Oil of Vitriol; place it in a Sand Furnace, and give gradual Fire till no Fumes appear in the Receiver: and this Operation you may repeat at Discretion.

I know not whether it be useful in Physic; but if the Arsenical Calx be wash'd from the Salts by the pondrous Oil (in the former Process) I am sure
it

it may be made Fusible, and truly fix'd.

Observations.

LET all your Operations be perform'd in a Chimney, that the Pernicious Fumes may freely ascend without Prejudice to the Operator; and when you grind the Arsenic, muffle your Mouth and Nostrils.

The Filings of Steel being an Alkali, absorb the Corrosive Salt of Arsenic, and keep it from Ascending with its more Sulphureous Part.

Put not above four Ounces of Spirit of Nitre at a time upon the Arsenic, and dispose the Mouth of the Retort so, that the Fumes may best go up the Chimney; when the Fumes are well wasted, put on four Ounces more of Nitre; and so the third time,

When it is melted, and fit to take out of the Fire, let the Cone, or Mortar, be placed in the Chimney, so that you may keep from the Fumes it emits

*Spirit and
Butter of
Arsenic.*

When the Butter is all rais'd, you may melt it down out of the Neck of the Retort into the Receiver, by holding a kindled Charcoal under it, as you do in the Butter of Antimony; then take off the Receiver, put on another, and Destil the running Mercury.

*Magnet of
Arsenic.*

Some order it to be done in an Earthen Vessel, and kept stirring till it is well mix'd, and whilst soft, to form it into *Amulets*; but to do it in a Retort is more safe from the Obnoxiousness of the Fumes, and renders the *Magnet* as useful.

*Fix'd Ar-
senic.*

If you cohobate the Spirit three or four times upon the Arsenic, it will stand a very great Heat in the naked Fire,

CHAP.

CHAP. XIV.

Of Salt Petre.

IT is a Salt, though Extracted out of the Earth, yet abundantly Impregnated with the Spirit of the Air. It also cleaves to Stone-Walls, Rocks, Clefts, and Caverns under Ground. That which is Extracted out of Fat Earth is made in most Countries of Europe; but our greatest Quantities come from the East-Indies.

It is compos'd of near an equal quantity of Fix'd and Volatile Nitrous Aerial Salts, bitterish in Taste; It is the Product of the Elements, deposited in the Bosom of the Earth, for the Generation and Nourishment of Vegetables, and may not improperly be call'd, The Universal and Un-specific Mercury; which I shall leave to Quick and Fit Souls to Reflect and Philosophize further upon.

Purifi-

Purification of Salt Petre.

TAke what Quantity you please of Nitre, dissolve it in warm Water; Filter, Evaporate, and Crystallize, as you do other Salts. This is an Operation not absolutely necessary amongst us, our Refiners of Salt Petre giving it well Purify'd to our Hands. Some esteem the Crystalline Nitre best, and others the Lump; but I could never observe any difference in them; the one being the top; and the Lump, the bottom of the Pan, in which the Nitrous Liquor was put to shoot.

Crystal Mineral.

Melt what quantity you please of Salt Petre in an Earthen Pot, or very clean Iron Kettle; when it is well melted, cast a little Flower of Sulphur upon it; when that is burnt, put on more, and so do till the Nitre flows clear as Rock-water, without any scum; then with a clean Iron or Brass Ladle, take it out of the Pot, and put it into a warm Brass Pan, or Mould; when that is coagulated, put it by, and with the
the

the Ladle take out more; and so do till all the melted Salt is cast, which keep for Use. It is also call'd *Sal Prunella*.

If you desire it yet more pure, dissolve it in clean warm Water; Filter the Dissolution, and Evaporate till a thin Skin appear upon its Surface; then set it to CrySTALLize; and this is call'd *Crystal Mineral*, or *Sal Prunella CrySTALLISATUM*.

Its Operation is Diuretic and Cooling. Its given in Fevers, Quinseys, Gonorrhœas, and in Pestilential Diseases.

Its Dose from ten Grains to one Scruple, or half a Dram, and so on to an Ounce.

Sal Polychrestum.

MIX equal Parts of Sulphur and Nitre in fine Powder, and put them into a red hot Crucible, by a Spoonful at a time; as soon as the Flame of one Spoonful is consum'd, put in another, and so continue it till all your Mixture is in; put a Tile over the top, cover it all over with Coals, and keep

keep it in Fusion four or five Hours, and then pour it into a warm Copper Vessel, and when cold, Powder and Dissolve it in warm Water ; Filter the Dissolution, and Evaporate till it is dry.

If the Salt be not so white as you desire it, put it into a Crucible, and set it in a strong Fire three or four Hours longer, continually stirring it till it is very white. Then again Dissolve, Filter, and Coagulate, and you will have a pure *Sal Polychrestum*.

Its Operation is Cathartic and Diuretic.

Its Dose is from half a Dram to one Ounce.

If to six Ounces of *Sal Polychrestum*, you put one Ounce of Sublimed *Sal Armoniac*, and half an Ounce of *Sal Mirabile Glauberi*, and then Dissolve, Filter, and Crystallize them together ; the Composition will be much more agreeable, and better deserve the Name of *Polychrestum* than before.

The

The Purging Salt of Nitre.

PUT one Pound of Nitre into a Crucible, set it in a wind Furnace ; give it gradual Fire till it melts ; then put into it a live Charcoal, about a quarter of an Inch Diameter, when it has done Flaming, put in another, and so continue to do till the Coal causerh no Flame: This is call'd *Fix'd Nitre* ; Pour this into a warm Mortar, beat it to Powder, and dissolve it in Destill'd Vinegar ; Filter and Evaporate in a wide-mouth'd Glafs ; dissolve it again in fresh Destill'd Vinegar, Filter and Coagulate the third time ; then dissolve it in high Rectify'd Spirit of Wine, which Destil from it, and you will have a Salt easie of Fusion, pleasant in Taste and Operation.

It is Cathartic and Diuretic, and opens Obstructions in all the chief Bowels.

Its *Dose* is from two Scruples, to four or five Drams.

The Fix'd Nitre being expos'd to the Air, dissolves into an Oil of Nitre, *per deliquium.* Spirit

Spirit of Nitre

TAke one Pound of Nitre in fine Powder, and four Pounds of clean Tobacco-Pipes, or Fullers Earth, also beaten to fine Powder; mix them well, and put them into a good Earthen, or coated Glass Retort; place it in an open Furnace; Lute a Receiver, and kindle a Fire under it, which keep in the first Degree, till you see some reddish Fumes appear in the Recipient, neither augment it till those Fumes disappear; then increase to the second, which will raise more red Fumes; when they begin to decrease, raise it to the third, and so on to the fourth, and most extream Degree of Fire, till no more Clouds come over; then let out the Fire, and as soon as it is cool enough, take off the Receiver, and put the Spirit into a Glass, with a Glass or Wax Stopple.

Its chief Use is to dissolve Minerals, which it performs as well and some think better than Aqua Fortis.

But it is also a noble Diuretic: the Dose from ten to fifty Drops.

Spirit

Spirit of Salt Petre, with Oil of Vitriol, and the Sal Enixum of Paracelsus.

PUT one Pound of Salt Petre into a Glass Retort, and pour upon it one Pound of Oil of Vitriol, and twelve Ounces of Spring Water, mix them and avoid the Fumes ; then place the Mixture on a Sand Furnace ; lute on a Receiver, and give a Fire of the first Degree two Hours, advance to the second, where keep it two Hours longer, and so on to the third and fourth, giving two Hours to each Degree, in which time the Operation will be ended. When all is cold, take off the Receiver, and put the Spirit in a Vial stoppt with Wax, or a glass Stopple. This Spirit answers all the ends of the former.

In the Retort you will find a white Mass of a pleasant Acid Taste.

Its *Operation* is Diuretic, and a powerful Opener of Obstructions.

Its *Dose* is from one Scruple to one Dram, in Water-gruel, Broth, or Water.

The

The Sweet Spirit of Nitre.

PUT into a Retort half a Pound of Spirit of Wine Tartariz'd, to which add four Ounces of Spirit of Nitre, by half an Ounce at a time; a crackling will ensue upon the Mixture, and when that is over, put in more, and so proceed till all is in; then shake them well together, and place the Retort in a Sand Furnace; fit a Receiver, not luted, or but slightly; make a Fire of the first Degree, proceed from thence to the second; where keep it one Hour and a half; and then one Hour more of the third will finish the Operation..

It is Diaphoretic and Diuretic; also a great Expeller of Wind, and Opener of Obstructions.

Its Dose is from ten Drops to two hundred.

Single Aqua Fortis.

TAke of Crude Vitriol three Pounds, of Nitre two Pounds; beat and mix them well; put the Mixture into
an

an Earthen Pot, call'd a long Neck, place it in an open Fire ; fit to it a Receiver, which lute well with Clay, Sand, and cut Flax, wrought together ; give a Fire of the first Degree for three Hours ; in that time you will see some red Fumes in the Receiver, which will again disappear ; then raise the Fire to the second Degree, where keep it three Hours longer ; go on to the third and fourth, where keep it till the Receiver is free from Fumes. When all is cold, take the Receiver off carefully, and keep the Aqua Fortis for Use ; which is chiefly by *Dyers*, *Refiners*, and *Vernish-makers* ; and is also a good *Menstruum* to be used in the Preparation of other Medicines.

Double Aqua Fortis.

TAke of Vitriol Calcin'd almost to a Redness, four Pounds, of Nitre two Pounds, both made into fine Powder, and well mixt ; put the Mixture into an Earthen Long-neck, or Glass Retort luted, set it in a Reverberatory Furnace ; fit and lute on a Receiver to it ; kindle the Fire, and proceed, as in
O the

the single Aqua Fortis. Some mix Clay with the Calcin'd Vitriol and Nitre, but it is altogether unnecessary: And if you desire its *Caput Mortuum* wash'd, 'tis inconvenient.

Tincture of Salt Petre.

TAke of Nitre fix'd with Charcoal, as directed in the Purging Salt of Nitre, one Pound; put it into a Crucible, and give it a strong melting Heat, for three or four Hours; then put it into a warm Mortar, powder it, and whilst warm, pour upon it half a Pound of Tartariz'd Spirit of Wine; fet the Mixture in a Matraass, upon warm Sand, gradually incteasing the Fire, till the Spirit of Wine simmer; and so continue it two or three Hours, in which time the fix'd Nitre will have communicated its Tincture to the Spirit of Wine; decant, and put on more, and digest so long as it yields any Tincture.

Its Operation is Diaphoretic and Diuretic.

It purifies the Blood, and is a great Antiscorbutic. Its

Its *Dose* is from twenty Drops to a Dram.

A Pleasant Purging Salt.

Take one Pound of Salt Petre, grind it well with half a Pound of Flowers of Brimstone; put it by Spoonfuls into a hot Crucible; when it has stood melted a quarter of an Hour, pour it gradually into a large Pan of hot Water; then add Oil of Vitriol, and pulveriz'd Sal Armoniac, of each four Ounces; boil it up to a Salt, which beat into Powder, and keep for Use.

The *Dose* from one to three Drams.

Fulminating Powder.

IT is compos'd of Nitre three Parts, Salt of Tartar two Parts, and Sulphur one Part; mix them diligently, and keep the Powder dry for Use.

Its *Operation* is Diaphoretic and Diuretic.

Its *Dose* is from ten Grains to one Dram.

If you put one Dram of this Powder into a Spoon, Fire-shovel; or on the Point of a Knife, and hold it over a gentle Fire, half a quarter of an Hour; it will then begin to melt, and give a Report like a Musquet.

Observations.

*Sal Pru-
nel. or
Chrystal
Mineral.*

THIS differs not much from pure Nitre; the burning of Sulphur upon it consumes the accidental Dirt, which may have fall'n into it; and Evaporates a little of its Humidity and Spirit; but whether this makes the Medicine more or less Effectual the Physician is the best Judge.

*Sal Poly-
chrestum.*

This ought to be made of pure Nitre, because what is Impure, or of the Nature of Common Salt, fixes with the Medicine in its Preparation: which some (with good Reason) think not to answer the Intent of the Medicine.

*Nitrum
Cathartic.*

You ought to dissolve the fix'd Nitre so often in Vinegar, till it comes off as sharp in its Destillation from the Nitre, as it was when put to it.

The

The Nitre for this Operation ought to be pure and dry; for if it be not separated from the Common Salt, which is in all our unrefined Nitre, it will produce an *Aqua Regia*. If it be not dry, it cannot be made into such fine Powder as is requisite to keep it from melting together, by which the Emission of its Spirits would be hindred.

This Spirit is made with less trouble than the former, and to answer the Charge of the Oil of Vitriol, you have the Salt which some have observ'd to be endued with all the Virtues of *Tartarum Vitriolatum*.

For this Operation you need not take the trouble of making the Nitre so fine, as in the Spirit of Nitre the Crude Vitriol and Nitre melting together in the Retort, sufficiently mixes them.

The Nitre ought to be finely powder'd, the better to mix the Calcin'd Vitriol and Nitre, before they are put into the Retort, for the Reason recited in the Spirit of Nitre.

You may put the first and second Tinctures together in a Retort, and draw

off so much Spirit of Wine as is necessary to leave the remaining Spirit of Wine well charged with the Tincture.

Spir. Nitr. Dulc. Observe but the Process, and no other Caution is requir'd.

Pul. Fulminans. Let the Nitre, Salt of Tartar, and Sulphur, be all very dry, and grind them in a warm Mortar, with a warm Pestle. For if you let them attract Air, it lessens the Crack.

Note, That in the Rectification of these, and other Acid Spirits, the Phlegm comes first ; whereai in all Vinous and Urinous Spirits it comes last.

CHAP. XV.

Of Common Salt.

COMMON Salt is the Quintessential Part of Salt Water, (*viz.*) of the Sea, or of Fountains, which remains after a full Evaporation of the insipid Humidity of the said *Marine*, or Fountain-Water. Of it there are three sorts, (*viz.*) *Sal Gem*, so call'd from its Transparency,

sparency, and similitude of Precious Stones; that made by Evaporation of the Water of Salt-Fountains, and of Sea-water. The *Sal Gem* we have from the *North-East* Countries, as *Poland, &c.* where there are large Rocks of it; the Fountain-Salt out of *Cheshire* and *Worcestershire*, and that of the Sea from all Parts of the World near the Sea, and of it there are two sorts, that made by Evaporation with Fuel, and that dried by the Sun, the last of which is the strongest. The *Sal Gem* is the most Penetrating, as appears by its Dissolving, and Volatilizing Gold, more powerfully than the other.

Purification of Salt.

IT is separated from its Earth, and and accidental Dirt, by Dissolution, Filtration, and ChrySTALLIZATION.

Decrepitation of Salt.

PUT what quantity of Common Salt you please into a Crucible, (or any other Earthen Vessel which will endure the Fire) give it such a Heat

as will make it crackle, but not melt ; continue it in that Degree of Fire (now and then stirring it with an Iron Hook) till it cracks no more ; and this you may do either before, or after Purification.

Spirit of Salt.

TAKE of Common Salt one Pound and a half, of burnt Tobacco-Pipes, or Fuller's Earth, four Pounds and a half ; let the Salt and Bole be well dried, and beaten into very fine Powder ; then mix them exactly, and put them into an Earthen or Glass Retort Luted, which ought not to be quite two thirds full ; place the Vessel in a Reverberatory Furnace ; cover it with its Dome ; fit and lute on a Receiver ; make under it a Fire of the first Degree, and continue it about two Hours, in which time the Lute will be dry ; then increase the Fire to the second Degree, and continue it so three Hours, and so proceed to the third, and there keep four Hours ; urge it further to the fourth, for five Hours longer ; in which time (the Fire being exactly manag'd) the Operation will be ended, which you will

will perceive by the Disappearance of the white Clouds in the Receiver; let it cool, and take off the Spirit.

Put the Spirit into a clean Cucurbit, or Retort; place it in Sand, in a gentle Heat, fit a Receiver not luted; give it gentle Fire, to raise the insipid Phlegm; when you perceive the Drops to have an Acid Taste, put away that which is in the Receiver, which put on again, and lute; keep it in a Fire of the second Degree, till there is a Minutes space of time between the falling of each Drop. Then take off the Spirit, and keep for Use. It is more grateful in Taste than it was before its Rectification.

In the Retort will be left the heavy Spirit of Salt, which is improperly call'd its Oil; which may also be Rectify'd, and rendred more grateful, by increasing the Fire to the third and fourth Degree, till nothing is left in the Retort, but a Stiptic Yellow Earth.

Its Operation is Diuretic, and is us'd in any Vehicle, to make it of a pleasant Acidity. It is given in Fevers, Obstructions of the Liver and Spleen, Dropsies,

sies, Jaundice, and to quench Thirst.

Its *Dose* is from ten, to sixty or seventy Drops.

Spirit of Salt, made with Oil of Vitriol, &c.

TAKE of clean Common Salt, and Fountain-water, *ana* two Pounds, of Oil of Vitriol, the same quantity, and mix them thus. First put the Water into an Earthen Vessel; then put the Oil to it by two or three Ounces at a time; if you put in more it will endanger breaking the Vessel by its violent Heat.

Then put the Salt into a Glass Retort, and put the Oil and Water to it; set it in a Sand Furnace; fit a Receiver to it, and make a Fire of the first Degree for one Hour, and advance to the second; where keep it three Hours; increase to the third four Hours, and so to the fourth, till no more Fumes or Drops come into the Receiver. This Spirit (without any Rectification) is
more

more grateful than the former, and equal to, if not exceeding it in Virtue.

Sal Mirabile.

TAKE the Salt left in the Retort, after the Destillation of the aforesaid Spirit of Salt; Dissolve and Filter it; Evaporate part of the Water, and set the other in a cold place to ChrySTALLIZE. In cold Weather it will Shoot in Forty eight Hours, and in warm Weather in three or four Days.

Its *Operation* is Cathartic and Diuretic, and answers all the Uses of most of the Purging Waters.

Its *Dose* from half an Ounce to an Ounce, in a Pint or a Quart of Purging or Spring-Water.

Spirit of Sal Gem.

SPIRIT of Sal Gem is made in every respect as that of common Salt, either with Bole, or Oil of Vitriol.

Its

Its Use and Virtues are the same as Common Salt, but 'tis a more powerful Dissolver of Gold.

Observations.

*Spirit Salt
com.*

YOU may put one part of Crude Tobacco-Pipe-Clay, to two Parts of Bole, and work it well with the Bole or Clay moist; make it into little Pellets, which dry, and then Destil, as you are directed.

Spirit.

Sal. cum

Ol. Vit.

About the middle of this Destillation the Matter in the Retort will bubble and make a Noise, then be careful that you do not augment the Fire too fast, lest the Retort or the Receiver breaks.

*Sal Mi-
rab.*

If the Retort perform the Operation without cracking, you may put Water to the Salt which is in it, and Dissolve and Filter, and so save the Retort. The Evaporation may be made in a clean Iron Kettle, or an Earthen one.

C H A P. XVI.

Of AMBAR.

IT is suppos'd to be a Bituminous Juice and Rosin of the Earth, soft and viscous, for in it we often find Flies, Ants, &c. It is call'd *Ambar*, *Succinum*, *Carabe*, and *Glessum*. It is found in the *Persian Gulph*, or the *Italian Shore*; also in the *Currents* near the *Baltic Sea*, in the *Dutchy of Prussia*. It is of different Colours, *viz.* White, Yellow and Black : But those who work it into Beads, and other things, make a Distinction of twenty or thirty sorts.

The White is most esteem'd for *Physical Use*, as being best Digested, and of the most Odoriferous Smell, containing the greatest quantity of Volatile Salt. The Yellow is next in goodness, and most valued by the Ambar-workers, by reason of its Transparency. The Black is least in esteem. *Ambar*, by agitation, sends forth an agreeable Smell, and being ground into fine Powder, is given in *Gonorrhoea's*, Spitting of Blood, the Bloody Flux, and the Immoderate Flux of the Hemorrhoids, Terms,

Terms, &c. Also to stop the Violence of Catarrhs, if the Fume of it be received up the Nose.

It is found in pieces of different sizes, from the bigness of a great Pin's Head, to those of five, six, or seven Inches Diameter; the greater Pieces are wrought into Cabinets, Cups, and several Figures, and are valued according to their Bigness and Transparency.

That we meet withal in the Shops, is by the Druggists generally disposed into two sorts, by separating the White and Yellow Pieces, from those that are full of Scurf and Black, which they distinguish by the Names of Fine and Coarse Ambar: The Fine Levigated is for Physical Use, and the Coarse for Destillation.

Preparations of Ambar.

Oil, Volatile Salt, and Spirit of Ambar.

TAke of coarse Ambar in fine Powder one Pound, of Tobacco-Pipes, Bricks, Sand, or other Beile, also in fine Powder, three Pounds; mix them well, and with the Mixture fill a Retort

retort half full; set it in a Sand Furnace; fit to it a Receiver (not Luted) make a Fire of the first Degree for one Hour, increase it to the second, and so keep it two Hours; then to the third, in which keep it four Hours. In the first Degree some of the Acid Water we call Spirit, with a little of the finest Oil will Destil. In the second, the Spirit and Oil will continue dropping, and some of its Volatile Salt will rise into the Neck of the Retort. In the third, you will elevate more Salt with the Balsamic Oil; and if you will urge the Fire to the fourth Degree, it will raise its thick Balsam. As the Salt rises into the Neck of the Retort, you ought to scrape it out with a clean flat Stick, and put it upon brown Paper to suck up the Oil: The Salt, by this means, will be white, and if you desire it more fine, you may Dissolve, Filter, and Evaporate it, and you will have a very white Salt. When the Destillation is over, and all cool, Separate the Oil and Spirit, by a Funnel, or other Separating Glafs. If you would rectifie the Oil, you may put it into a long bodied Retort, and set it in Sand, and by gradual raising the Fire to the second Degree, there will Destil a fine yellow, and clear Oil.

Oil. But if you would have a pure white, and Æthereal Oil, you must put it into a Cucurbit, with three times the quantity of Water to that of Oil (with which the Vessel must not be quite half full) and then fit on the Head and Receiver, and gradually bring up the Fire to the second Degree, or so as to make the Oil and Water bubble, and and you will Destil a pure Æthereal Oil, which must be separated as before. Separate the Water from the Oil left in the Retort, and you will find it Impregnated with some of the Salt, and therefore put it into the Receiver, into which you made the first Destillation, and shake it well, to rinse out the Salt. Then pour all into a Cucurbit; fit to it a Head and Receiver; give a gentle Fire to Evaporate the Water, till the Drops fall a little Acid; then let it cool, and put it to the Spirit which you separated in the first Destillation; rectifie them together, and you have the Spirit of Ambar.

The *Operation* of the Oils, Spirit and Salt, is Diaphoretic and Diuretic.

The *Dose* of the Rectify'd Oils is from one to twelve, or fifteen Drops;
of

of the unrectify'd Oil from one to fix or seven Drops. The *Dose* of the Spirit is from ten Drops to one Dram; and that of the Salt from two Grains to one Scruple.

The Rectify'd Oil is given in Hysterical Distempers, in the Palsy, Apoplexy, and Epilepsy: The Salt and Spirit are given in the Stone, and Gravel in the Kidneys and Bladder, Stoppage of Urine, Ulcers in the Neck of the Bladder, &c. The Balsamic Oil is most us'd Externally, but often given with good Success in old Gleet, a Disease which frequently puzzles the best Physicians and Surgeons.

The Compound Oil of Ambar.

TAKE Ambar finely powder'd, Olive Oil, of each one Pound; put them into a Retort; place it in a Sand Furnace, and give it a gradual Fire till all is destill'd. When cold, take off the Receiver, in which you will find an Oil with a stronger Gas than that from Sulphur; put it instantly into a Bottle, very close for Use.

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This

This is a wonderful Paralytic.

The Dose from five to fifteen Drops.

For Internal Use, some successful Practitioners mix one Dram of this Oil with one Ounce of Compound Spirit of Lavendar; and give from ten to forty Drops at a Dose. Externally, they order six Ounces of Camphorated Spirit of Wine; and half an Ounce of this Oil to be well shaken together; and with it, foment the Parts affected.

Tincture of Ambar.

PUT four Ounces of Ambar (in very fine Powder) into a Bolt-head, pour upon it twelve Ounces of Spirit of Wine, invert a small Bolt-head into the Mouth of the bigger, lute well the Juncture, and set it to digest upon a heat of Sand four or five Days, shaking it about two or three times in a Day; when the Spirit is well tinged of an Ambar Colour, pour it into a Vial, and put half a Pound more of Spirit of Wine, digest as before, which also will extract a Tincture, both which
put

put into a Matraass, and in a gentle Heat of Ashes, draw off one half of the Spirit of Wine, which will serve again for the same Use; and put the Tincture into a Vial well stoppt.

Its *Operation* is a little Diaphoretic; it is given to Histerical Women, and is good for the Apoplexy, Palsy, and Epilepsy.

Its *Dose* from ten to seventy or eighty Drops in any proper Vehicle.

The Powers of Ambar,

TAKE Oil of Ambar one Ounce, the volatile Salt of Armoniac half an Ounce, grind the Oil and Salt well together in a little Mortar, pour to them Spirit of Wine Tartariz'd half a Pound, and put them afterwards into a Bolt-head, invert a little Glass to make it fit for Circulation. Lute well the Joint, and put it on warm Sand to stand in Digestion four or five Days, shaking it two or three times every Day, in which time the Spirit of Wine will have imbib'd the Oil and Salt; set it by, and when 'tis cold, put it in a Vial, well stoppt, and keep for Use.

Its *Operation* is Diaphoretic and Diuretic. It is of the same Use with the Oil, Spirit, and Salt of Ambar, and is an Excellent Medicine against the Cholic in Stomach or Bowels.

Its *Dose* from ten Drops to half a Dram, or two Scruples.

Observations.

THE Oil, Spirit, Salt, and Tincture, require no other Remarks than what are only given in the Processes: If you put the Salt of *Sal Volatile Oleosum*, instead of the *Sal Volatile Armoniacum*, it will be more acceptable to some Persons.

I must not omit to instruct you how to discover the various Adulterations of Salt of Ambar, which being now much used by our learned Physicians, some dishonest (as there are some in all Professions) Chymists, for filthy Lucre sake, mix it with Sal Armoniac; others with Cremor Tartar, and others with Salt of Coral: If with the first, you'll soon perceiye a strong vinous Scent, when
you

you grind it with a little Salt of Tartar. The second shews it self by being put into clear Water; for the Salt of Ambar will dissolve long before the Cremor Tartar; and the last Cheat is discover'd by trying this Salt upon a red hot Iron; for the genuine Salt will fly away, the Vinegar the Coral had absorb'd will be destroy'd, and nothing but an insipid Earth left upon the Iron.

CHAP. XVII.

Of CORAL.

IT is a petresy'd Plant, which shoots out from Rocks in the bottom of the Sea: There are three sorts of it, viz. *Red*, *White*, and *Black*. The *Red* is most in Esteem and Use; the *White* next; but of the *Black* I have never met with any Preparation: The *Red* is found in the Seas of the *East-India's*, and the *Mediterranean*: Some say 'tis green and soft under Water, and by the Air is presently turn'd red and hard; the *Black* is often upon the same Branch

with the *Red*: The *White* is found in the *West-Indian* Sea, upon the Coast of *Spain*, and in the West of *England*, upon the Coast of *Cornwal*. The Chymical Preparations of the *Red* are the Tincture, Magistery, and Salt; and of the *White*, the Magistery and Salt. But some prefer the Use of Coral brought into an impalpable Powder, by grinding only, before any other Preparation whatsoever.

Preparations of Coral.

Salt and Magistery of Coral.

TAKE what quantity you please of *red* or *white* Coral in fine Powder, put it into a clean smooth Earthen Dish, or wide-mouth'd Glass; mix with it destill'd Vinegar, and there will arise presently a strong Ebullition: when it is over, put more destill'd Vinegar to it; and so continue to do as long as you perceive any Fermentation; then set it upon warm Sand, stirring it now and then with a clean Tobacco Pipe, till you see the Heat excites no Effervescence; then filter the Liquor, put by the Moiety of it for the Magistery, and the

the other part evaporate to dryness in a gentle Heat, which is the Salt of *Coral*.

N. B. After the same manner you may make Salt of *Crabs Eyes*, or of any testaceous Powder.

Its Operation is *Diaphoretic* and *Diuretic*; and is said to revive and fortifie the Heart; stop Bloody Fluxes, and all other Hæmorrhagies, and to resist Poison.

Its Dose from ten Grains to one Dram.

Upon the other part of the Liquor, drop Oil of Tartar *per deliquium*, upon which will arise a white Curd, and will in a little time precipitate to the bottom; when the Liquor is clear, drop in more; and if it turns the Liquor white as before, let it settle, and so continue till the Liquor will not curdle by the Oil of Tartar; when the *Magistery* is all settled, decant the Liquor, and put clean Water to the *Magistery*; shake it about, let it settle, and decant as before, and so do five or six times till the *Magistery* has lost all its Salt Taste; dry it gently, and keep it for Use.

It is endued with the same Virtues with the Salt,

Its *Dose* may be augmented to four Scruples.

The Tincture of Coral.

IT is made several ways, and with divers *Menstruums*, which by Time and Heat, becoming red, it is thought (with good reason) that the Tincture proceeds more from the Spirits than from the Coral; I will therefore give you one, which I think to be the most genuine Tincture of Coral.

Reduce half a Pound of Red Coral into impalpable Powder, and mix it with equal its weight of sublimed Sal Armoniac also in Powder; put the Mixture into a Retort, which place in Sand; fit to it a Receiver, and having luted well the Junctures, make Fire of the first Degree, one Hour; proceed to the second, which continue two Hours; go on to the third, and keep it there three Hours, or till all the Sal Armoniac is sublimed. It will be tinged with variety of Colours, as Red, Green, Blue, &c. and contains

contain in it the true Tincture of Coral, which is apparent by its Body, being left white in the bottom of the Retort. Put all these sublimed Flowers into a Matrafs, and to every four Ounces of the Flowers put ten Ounces of Tartariz'd Spirit of Wine; set them upon warm Sand, in a double Vessel to digest, for three or four Days, and shake them every day two or three times; when the Spirit of Wine is well tinged, put on more, and let it stand as before: Then put the tinged Spirits together (being twenty Ounces) into a Matrafs; draw off twelve or fourteen Ounces, and the six or eight remaining will be deeply tinged with the Sulphur of Coral.

Its *Operation* is Diaphoretic and Diuretic.

Its *Dose* from ten Drops to one Dram.

Observations.

Make the Evaporation in a Glass *Sal Coral.* Vessel, with a wide Mouth, and in a gentle Heat of Sand; the Earth will suck up a great deal of Salt, and too strong a Heat will discolour it.

When

*Magist.
Coralii.*

When it is well settled, and washt sweet, you may drop it upon a clean Chalk stone, to absorb the Humidity, and then dry it further between Paper in the Shade.

*Tinæ. Co-
ral.*

The Sal Armoniac ought to be prepared by Dissolution and Sublimation; so that no heterogenous Matter may be elevated with the genuine Sulphur of Coral.

C H A P. XVIII.

Of Japan Earth.

IT is brought from *Japan*, and by the Natives call'd *Catechu*, in Colour and Weight it differs; some make nine or ten distinct sorts of it: But be it of what Colour it will; that which is lightest, breaks smooth, and is most stiptic on the Tongue is best; in Taste it is something bitter, but not unpleasant, prepares the Palate to receive Wine with much Pleasure. There are several Compositions of it made into Troches;

Troches ; that most in Esteem is called *Catechu*.

Catechu.

Make what quantity you please of *Japan Earth* into Powder ; dissolve it in Barly-Cinnamon Water ; pour off the Dissolution from the Faces, and dry it gently ; when 'tis dry, mix two Ounces of it with three Ounces of Sugar Candy, Ambargreece half a Scruple, Musk fifteen Grains ; and Butter, or (as they call it) Spirit of Roses fifteen Drops ; grind them all extreamly well together till they are impalpable, and with the Muoilage of Gum Tragacanth, make them into little Pills of the bigness of Pearl Barley

One of these Pills held in the Mouth, causes a sweet Breath, and renders all Liquors very Palatable ; forty or fifty of them dissolv'd in the Mouth, and swallowed in a day, help Catarrhs, Fluxes of the Belly the Bloody-flux, and overflowing of the Terms : And it is also an excellent Medicine in a Gonorrhæa, and even old Gleets.

The

The Tincture of Japan Earth.

Powder finely four Ounces of *Japan Earth*. Of the best *Cinnamon* one Ounce, of the *Peruvian Bark* one Ounce and an half, let them be made also into fine Powder, with Musk and Ambar-greece, *ana* six Grains; let the two last be well ground with one Ounce of *Sugar Candy*; put them all into a Matraass- and put to them of *Spirit of Wine* twenty four Ounces; make of the Matraass a Circulating Vessel; lute well the Juncture; set it upon warm Sand to digest four or five Days, shaking it about two or three times a day; then set it by to settle, and by gentle Inclination pour it into a Vial, and keep for Use.

It is good for all the foremention'd Purposes, and also an excellent Antifebrific.

Its Dose from half a Spoonful to three or four, in Wine, or any other proper Vehicle.

These need no other Observation than adhering to the Processes,

A
Compleat Course
OF
Chymistry.

PART II.

CHAP. I.

OF VEGETABLES.



ALL Plants proceed from Seed, in which they are for some time shut up, as in a Matrix, till the Saline Humidity of the Earth, and Heat has Penetrated and Softened the outer part of the Seed, enter'd its Pores, and given Extension to the young Plant, by which its Parts become perceptible.

Plants

Plants are nourished by their Roots, which receive their Nutriment by Pores, and are afterward Exalted by the Heat of the Sun, which distributes itself into the Fibres of the Plant, and causes such a Filtration and Circulation of the Juices, as gives Nourishment to the Vegetable Parts; the most Exalted and Subtile Parts whereof ascend to the Flowers and Fruit, the more Aqueous and less rarify'd give Nourishment to the Leaves and Branches. From the more Oily Part proceed Gums and Resins; and from the more gross and Terrestrial is compos'd the Bark.

CHAP. II.

Of JALAP.

IT is a Root brought to us from *America*, sliced and dry'd; that which is most Ponderous, and breaks with shining black Resinous Veins is best. It is a great Cathartic, and purges watry Humours: The Powder of it is given in White-wine, from ten Grains to one Dram and a half.

Resin

Resin of Jalap.

TAKE of Select *Jalap* one Pound, powder it, and put it into a Matrafs; put to it six Pounds of Rectify'd Spirit of Wine; invert a Bolt-head and lute it; set it upon Warm Sand three or four Days, and shake it every Day two or three times; when the Spirit is well Tinged, decant it carefully through a Hair Sieve into a Cucurbit; set it in a gentle Heat of Sand, or Balneo, and draw off the Spirit of Wine to one Pint, which you may return upon the *Jalap*, to make a second Extraction; Decant the Spirit as formerly; Lute on its Head and Receiver, and Destil as before. Let all cool, and in the Cucurbit you will find the Resin in form of Turpentine, which wash in three or four Waters, and in a gentle Heat dry it, till it will beat into Powder.

Its Operation is Cathartic.

It is given to open Obstructions, and in Dropsies, made into Pills or an Electuary.

Its Dose from three Grains, to one Scruple

CHAP.

C H A P. III.

Of R H U B A R B.

IT is a Purgative Root brought to us from *Turkey* and *East-India*; it is the Product of some Parts of *China* and *Tartary*. The most Compact (not Flinty) which cuts in Grains like Nutmegs, and is of a pleasant Flavour is best. And observe that generally the small Pieces exceed the great ones in Goodness, as being less subject to Corruption; after its Purgative Operation is over, it Binds, and is therefore given in Fluxes.

Its Dose is from ten Grains to two Drams.

Extract of Rhubarb.

BRuise, or cut into very thin Slices, what quantity of Rhubarb you please; steep it ten or twelve Hours in a sufficient quantity of Destill'd Rain Water, or any proper simple Destill'd Water; let it just simmer, and then pass it through a Strainer; infuse the
Remainder

Remainder in more Water, as before ; pass and press it hard through the Strainer ; put the Infusions together, and let them settle ; then, by gentle Inclination, pour off the clear Tincture from its Residence, and Evaporate to the Consistence of Honey, and it is the *Extract of Rhubarb.*

Observations.

ALL Extracts made with Water are apt to grow Mouldy ; therefore if you intend to keep them long, they ought to be made with Spirit of Wine.

After the same manner are all the Vegetable Extracts made, except Resins, which require Spirit of Wine to dissolve them : Also observe when you make the Extract of any Aromatic Herb, Flower, or Spice, that instead of Evaporation, you destil the Water, and save it for Use, &c.

C H A P. IV.

Of GUAIACUM.

Guaiacum is the Wood we call *Lignum Sanctum*, and *Lignum Vita*, It grows in several places of the *West-India's*, and is a Tree of great Magnitude. It is Sudorific, and much us'd in Decoctions. That which is most Compact, Resinous, and Ponderous, is best. Its *Gum* is both Sudorific and Cathartic.

Spirit and Oil of Guaiacum.

FILL an Earthen Retort two thirds full with such Dust of Guaiacum as you have at the Turners; place it in a Reverberatory, and lute to it a Receiver; give it a Fire of the first Degree one Hour, increase it to the second, and keep it there two or three Hours; go on to the third two Hours; and so to the fourth for two Hours more; or until you see no more Fumes will come into the Receiver: Let it cool, and take off what is Destill'd, and put it

it into a Coffin of Filtring Paper, in a Funnel ; the Spirit will filter through the Paper, and the Oil will remain in it : Put the Spirit into a Glafs Retort ; set it in a Sand Furnace ; fit on its Receiver, and give it a Fire of the first Degree, to raise the Phlegm ; when you perceive the Drops to come Acid, remove the Receiver, and put away the Phlegm as useless : Put on the Receiver again, and lute it, increasing the Fire gradually to the second and third Degree, and it will bring over all the Spirit, which put in a Vial for Use.

The Oil may be rectify'd in a Retort ; 'tis generally us'd for the Tooth-ach, and to clean rotten Bones, without Rectification.

Its Operation is Diaphoretic.

Its Dose is from two, to eight or ten Drops.

The Spirit is Diaphoretic and Diuretic.

Its Dose from twenty Drops to sixty, or seventy.

Q 2

You

You may calcine the *Caput Mortuum* to a white Ash, and then with warm Water extract the Salt, as you will see hereafter of other Vegetable fix'd Salts.

CHAP. V.

Of Sassafras.

IT is a Tree affording good Timber : It grows in several of our Western Plantations ; especially in *Virginia*, from whence we have it. Its Root is more fragrant than the Tree ; and therefore it is most us'd in Physical Cases. The Bark of both the Tree and Root is more Fragrant than the Wood of either, and yields more Oil considerably.

Oil of Sassafras.

TAKE of the Shavings, or the Wood grown to Powder, twenty eight Pounds ; put it into a Copper Still, to which put of clean Water twelve Gallons : Lute on the Head, and set a Spout

Spout Receiver to the Worm; make a gradual Fire, till it runs in a small thread into a Receiver; in which condition keep it, till by holding a Spoon under the Nose of the Worm, you perceive no Oil to destil with the Water; when the Operation is ended, separate the Oil which sinks to the bottom, and put it up.

Its *Operation* is Diaphoretic and Diuretic. It is given in the Venereal Disease, Gout, Stone, Scurvy, and Dropsy.

Its *Dose* from three to ten or twelve Drops.

After the same manner you may make the Oils of Rhodium, Cinnamon, Cloves, Clove-Bark, all Aromatic Herbs, and Seeds; and therefore I will not trouble you with any other Process of this kind.

Observations.

TH E Oils of Cinnamon, Cloves, Sassafras, Guaiacum, and Box, sink in Water; but I cannot remember any other but what will swim.

Q 3

As

As I shew'd you how to discern the genuine Salt of Ambar from the spurious ; so I shall here teach you how to discover when these Vegetable Chymical Oils are adulterated.

If they are mixt with Oil of Turpentine, you cannot take a Drop or two in Sugar, but you will soon perceive it. If with Oil or Balsam Capivii, the Fragrancy of the Vegetable will be much weakened.

But the common way of Sophisticating the dearer Oils of Cinnamon, Cloves, and Sassafras, is by adding a twelfth or sixteenth part of Spirit of Wine, which will quickly and intimately unite with them. But this Cheat also you will easily discover by dropping three or four Drops into a little Water, which will continue Milky a considerable time ; but if the Oils are true, they will sink to the bottom, without discolouring the Water.

CHAP.

CHAP. VI.

Of the Jesuit's, or Peruvian Bark.

IT was brought to us from *Peru* in *New Spain*, and its Use first taught us by the Jesuits: There have been for some years two sorts of it (*viz.*) the Cultivated and the Wild: The Cultivated is the best; and the best of that kind is that which is most Compact, Bitter, and of a reddish Colour.

It is a certain Remedy to hinder the Fits of an Ague, (if judiciously prescrib'd; otherwise 'tis very pernicious) and is given either in Powder, or infused in Wine.

The Infusion of Peruvian Bark.

TAke of the Bark in Powder two Ounces; put it into a Matraass, and to it two Quarts of White or Pale Red Wine; fit the Matraass for Circulation, and set it upon warm Sand, or in Balneo, forty eight hours; shake it about two or three times a Day, then let it cool, and pour off the Infusion (through a Strainer) into a Vial, and keep it stopt for Use. Q 4 Two

Two or three Ounces of this Infusion are given three or four times a Day in Agues, but never in the *Paroxysm*. Dr. *Smith* of *Paris* (who was Sir *Robert Tabor*'s Successor there) made his Infusion in Pale Red Wine.

The Tincture of Peruvian Bark.

TAKE four Ounces of the Bark in Powder; put it into a Bolt-Head; put to it of Tartarized Spirit of Wine twelve Ounces: Invert another less into the Mouth, to make it a double Vessel; set it in a gentle Heat of Sand, Balneo, or Baln. Vapor. four or five Days, shaking it every Day two or three times; then Decant the Tinged Spirit of Wine carefully into a Vial, which keep for Use.

Its *Dose* is from one Scruple to one Dram, or one Dram and a half, and in some Cases to half an Ounce; to be given in any convenient Vehicle, as a Febrifuge; beginning its Use immediately after the *Paroxysm*.

The

The Extract of Peruvian Bark.

PU T half a Pound of *Peruvian* Bark in Powder, into a large Matrafs; put to it of the simple Destill'd Water of Wormwood, Carduus, or any other proper Water, five or six Quarts. Place it in Sand, and let it boil gently two or three Hours; strain it; put more Destill'd Water to the Bark; Boil and Strain as before; put the Infusions together, and, in a Glass or Earthen Vessel, Evaporate gently, to the Consistence of Honey. Put this Extract into a Pot for Use.

Its *Dose* is from fifteen Grains to one Dram, in Pills, or Dissolved in Wine.

It is Endued with the same Virtues as the former.

CHAP. VII.

Of SUGAR.

IT is the Essential Salt of a Reed, which grows in the *East* and *West-India's*; That from *Brasile*, brought into *Europe* by the *Portuguese*, is accounted the best, which is called *Brasile* or *Lisbon* Sugar; but that which now we have from *Barbadoes* and *Jamaica* is very good, and by the Refiners of Sugar is made equal to any other in Goodness. It is Refined by Dissolution, and the Separation of its Earthy, Gross, Oily and Molossus Part; That which is made most White and acceptable to the Eye, is Refined by the help of Lime-Water, and being Evaporated to a due Consistence, is put into Moulds of a Pyramidical Form, with a hole in the bottom, to let the more Feculent Part run out.

Sugar-Candy is made of both Refined and Unrefined Sugar, by boiling of them in Water, and setting them to ChrySTALLIZE in Vessels, in which they put little Sticks for the ChrySTALS to adhere

adhere to. The White Candy is of the Refined Sugar, and the Brown of the Unrefined.

Sugar Candy is counted a good Pectoral, and given in Diseases of the Breast and Lungs.

Spirit of Sugar.

TO one Pound of Powder'd Sugar put three Pounds of Fullers Earth, also in Powder, or in its room put so much Sand clean washt; fill a Retort half full of this Mixture; place it in a Sand Furnace, and give it Fire of the first degree for two Hours; then increase it to the Second for two Hours more; proceed to the Third, where keep it till no Fumes appear in the Receiver. Then let all cool, and in the Receiver you will find a Foetid Spirit and Oil, which separate as usual. Put the Spirit into a Retort, or Cucurbit; set to it a Receiver unluted, make Fire of the first degree; and there keep it till you perceive the Drops have a little Acidity; put away the Phlegm; Lute on the Receiver; increase the Fire to the Second degree; where keep it till all is come off. It

It dissolves Pearl and Coral, and is also counted a good Medicine in the Stone and Gravel in the Bladder and Kidneys.

Its *Dose* is from ten to fifty or sixty Drops, in any appropriated Liquor.

The Compound Spirit of Sugar-Candy.

TAKE of Sugar-Candy (white or brown) half a Pound, of Sal Armoniac four Ounces, both made into fine Powder, and well mixt; put them into a Retort, which must be two thirds empty; place it in a Sand Furnace, and make Fire of the first Degree for an Hour; increase it to the second, and there continue it as long as the Drops fall at the distance of one second of Time; proceed then to the third Degree, and let it remain there till no more Fumes appear in the Receiver: In it you will find an Empyreumatical Spirit, with a little Oil; take out this Spirit and Oil; put them into a clean Retort, and rectifie in a gentle Fire of Sand, leaving the Oil in the bottom of the Vessel, and you will have a clear Spirit

Spirit, more agreeable than that of the first Destillation.

It is more Aperitive than the former, and its Use and Dose the same.

The Ardent Spirit of Sugar.

TAKE coarse Sugar, or Molossus, *q.*
v. put to it ten or twelve times its weight of Water, and let them stand a sufficient time to ferment; as soon as the Fermentation is over, put the Liquor into a Copper-Still, with its Refrigeratory, and give it gradual Fire till it begins to drop: Observe then so to manage the Fire, that the Spirit come from the Mouth of the Worm in a small Thread; and so continue till that which Destils is insipid; then let out the Fire, and rectifie the Spirit by a second Destillation, either in a Glass Body and Head, or (if your quantity be great) in a Copper Vessel; observing to separate the Spirit from the Phlegm, as in the first Destillation, which may be farther rectified till it burns all away.

It is of the same Use with Spirit of Wine, and is preferable to all but that of Grape.

Obser-

Observations.

THE Sand, or other Bole, is mixt with the Sugar, to hinder its boiling over.

The Vessel in which you Destil it ought to be at least half empty.

The insipid Water which comes over in the Rectification ought to be kept by it self, changing the Receiver as soon as you perceive the Drops which fall, to be of an Acid Taste.

If you put a tenth part of Dulcify'd Spirit of Salt, to the Spirit of Honey, or Sugar, in their Rectification, it will make them of a more grateful Smell, and not lessen, but rather increase their Virtues.

Lastly, urge not the Fire too strongly at the latter end, lest you raise some of the Foetid Oil.

C H A P. VIII.

Of W I N E.

WINE is made of the Express'd Juice of the Grape, which immediately after the Pressure, is called *Must*, and being Fermented, becomes Wine. The Fermentation causes a Separation of the gross Tartar, and the Viscous Parts of the Must, from the the pure Sulphureous and Oily ones, in which are the Spirit and Essential Salt. The solid part of the Tartar adheres to the sides of the Vessel, and the Viscous falls to the bottom.

The sharp sprightly Wines, such as *Champaigne*, *Burgundy*, *Nants*, *Bordeaux*. &c. being most impregnated with Essential Salt, yield more Spirit than Sweet *Spanish* and *Muscate* Wines, because they are more loaded with a Viscous Substance.

Spirit

Spirit of Wine, or Brandy.

FILL a Copper-Still (which hath a Refrigeratory) two Thirds full of *French Wine*; Lute on it Head, and put a Receiver to the Nose of the Worm; give it a gradual Fire till the Spirit runs in a small thread; keep it in that Degree till that which comes over, being thrown into the Fire with a Spoon, will not burn; then let all cool, and remove the Receiver, which contains the weak Spirit of Wine, or Brandy, &c.

Spirit of Wine.

PUT into a long-bodied Matrafs; so much of the fore-going Vinous Spirit as will fill one half of it; place it in a gentle Heat of Sand, and draw off one half, or till you see the small Veins expand themselves twice the breadth they at first appeared; then remove the Receiver, and you will have Spirit that will burn away to a Drop or two, if a Spoonful be set on Fire, by the Flame of Paper or Candle.

This

This Spirit serves for making several Extracts and Tinctures.

But if you will have yet a more high and perfect Spirit of Wine, put what quantity you please of the fore-going Spirit into a Vessel, and to each Gallon four Pounds of calcin'd Tartar, or the same quantity of Pot-Ashes in Powder, and very dry, shake them well and let them stand a quarter of an Hour, repeat the Agitation two or three times, that the Salt may imbibe the Phlegm; when 'tis well settled, decant the Spirit into a long Body, in the Mouth of which hang a clean Cloth, which contains in it one Pound of Salt of Tartar, proportionably to each Gallon; Place your Matraass, or Body in a gentle Heat of Sand; and the Spirit of Wine which destils into the Receiver will be perfect, the Salt receiving and keeping back the Phlegm. This Spirit is fit for any Use in Chymistry, as a Menstruum, or for extracting Tinctures, &c.

It is sometimes taken inwardly, to the quantity of half, or three quarters of a Spoonful, by Apoplectical Persons, and is externally us'd in Burns, also in cold Pains and Contusions, &c.

R

Spirit

Spirit of Wine Tartariz'd.

TAke Salt of Tartar, two or three times Coagulated and dissolv'd, one Pound; give it a strong Fusion in a Crucible for two Hours, powder it in a warm Mortar, and whilst warm, put it into a Matrafs, to two Quarts of the former Rectify'd Spirit of Wine; shake them well together, and place them in a Sand Furnace; lute the Junctures of the Head and Receiver; give Fire to such a Degree, as may make the Drops succeed each other very quickly: This Spirit of Wine volatilizes and carries over with it some part of the Salt of Tartar, which is demonstrable by the Salt sustaining the Loss of at least one Ounce of its Weight.

By this Operation the Spirit of Wine acquires a more agreeable Scent and Taste than before, and it is more Subtile, and given in a less Dose, and for the same Use as the former.

Spirit

Spirit of Wine Tartariz'd, another way.

TAKE the Salt of Tartar left in the bottom of the Matrafs, in the foregoing Operation, dissolve it in pure rectify'd Destill'd Vinegar; filter the Dissolution, and Coagulate the Salt, which dissolve again in more Destill'd Vinegar; filter and coagulate as before. Repeat this Operation so often, that no black Faces remain, and that the Destill'd Vinegar comes off as strong as it was put upon the Salt; then is this Salt prepared, which some call (but not truly) by the Name of *Volatile Salt of Tartar*.

If you will farther exalt this Salt, take of the fore-going Salt of Tartar, four Ounces; and put to it one Pound of the Spirit of Wine, which will readily dissolve it. Let the Dissolution stand quiet three or four Hours, and decant it gently from the Faces; draw off the Spirit of Wine in a gentle Heat of Sand in a Retort; dissolve the Salt again in the same Spirit of Wine, and repeat the Operation till no Faces remain: Return the Salt again into the Spirit of Wine, in which it will totally dissolve.

R 2

This

This is the true Tartariz'd Spirit of Wine, with which I extract the Tinctures and Anodine Sulphurs of Metals, and unite them with Vegetable fixt, and Animal Volatile Alkalies, which is one of the chiefest Ingredients in the Composition of that excellent *Anti-Rheumatic Tincture*, which fifteen or sixteen Years ago, cur'd me of a violent *Rheumatism*, that afflicted me three Years successively: And I was not only free'd then from those acute Pains that attended the Distemper, but have been preserved to this Day without the least Symptom of them. Nor is its Virtues confin'd to the Cure of that Disease only, but even to the Gout, Scurvy, Dropsy, Jaundice, Cholic, Green Sickness, Stone and Gravel in Bladder or Kidnies, and in Fevers: In all these Distempers it has manifested its Virtue, and given Relief to some Hundreds within these thirteen Years last past.

This Tartariz'd Spirit of Wine is Cathartic, Diuretic, and Diaphoretic.

Its Dose is from fifty Drops to two Drams, in Wine and Water, or Water alone.

The

The Cephalic, or Head Spirit.

TAKE of the Essential Oils of Cloves, Cinnamon, and Nutmegs, of each half a Dram; of Marjoram, Lavender, and Rosemary, of each two Scruples; of Oranges and Limons, *ana* one Scruple and a half; of fine Benjamin in Powder, one Ounce. Mix these all together in a Cucurbit, with three Pints of Tartariz'd Spirit of Wine; placethem in a Sand Furnace, sitting, and luting too, the Head and Receiver; kindle the Fire, which gradually increase to the second Degree, and in that Heat continue it till three Pints are drawn off.

Then take off the Receiver, and put the Spirit into a clean Matrafs, to which put of *Marum Syriacum*, and Lillies of the Valley, *ana* one Ounce, of *Sal Volatile Oleosum*, two Ounces, and of Essence of Ambargrease one Dram and a half; shake them well, and invert a blind Head to the Matrafs, and keep it in a gentle Heat of Digestion three or four Days, and then put it into a Vial well stopp'd for Use,

R. 3 *It*

It is a most Pleasant and Excellent Cephalic, three or four Drops of it being strongly Inust up the Nostrils, and the Temples a little rubb'd with it, does immediately remove most Pains of the Head : It may also be taken from ten to thirty or forty Drops, in a little Glass of Wine or Water, and is a most Effectual Pectoral Medicine.

This is that true *Spiritus Cephalicus* which I have made above thirty Years, and has by several Persons of late Years been Counterfeited, and call'd by the Name of *Liquid Snuff*.

Spirit of Scurvy-Grass.

TAKE of Garden-Scurvy-Grass in Flower, (or fresh and newly gathered, at any other time) twenty Pounds ; bruise it grossly, and put it into a Copper-Still, Tin'd within ; Put to it three Gallons of the Grounds of Ale, with a Pint of new Yest ; stir them well together : lute on the Head, and kindle a little Small-Coal under it, to give just a Fermenting Warmth ; let it stand twenty four Hours, and then
give

give Fire to destil the Spirit. That which comes first is the best, and ought to be kept by it self: The second Running will serve to put to more Grass, when you destil it another time.

It is also made without Fermentation, with Spirit of Wine, thus: To twenty Pounds of Scurvy-Grass, bruised as before, put two Gallons of Brandy, or Destillers Proof Spirit, make Fire under it, and destil one Gallon, which will be strongly Impregnated with the Virtue of the Herb. The second Running you may keep for the same Use as before. Some add to every ten Pounds of Grass, two Pounds of Horse-Raddish, sliced or bruised, &c.

The *Purging Spirit* is made by Dissolving one Ounce of Resin of Scammony, or Jalap, in one Pound of the Spirit.

The *Dose* of the *Plain Spirit* is from twenty to an hundred Drops; and of the *Purging Spirit*, from twenty to sixty Drops, &c.

R. 4

The

The Queen of Hungary's Water.

TAKE of the Tops of Rosemary, when full of Flowers, what quantity you please; put them into a Copper-Still, Tinn'd within; pour upon them three times their Weight of Rectify'd Spirit of Wine, with as much clean Water; lute on the Head; fit a Receiver to the Worm, and make a little Fire of Small-Coal, but not so hot as to elevate any Spirit; and thus let it stand twenty four Hours; then give it Fire to cause it to Destil in a small Thred; and draw off the same quantity of Spirit, and half the Water. Then let out the Fire, and take the Rosemary Tops out of the Still, and put one third part of the quantity of Flowers to those already in the Still. Return all the former Destillation upon the Flowers; Lute on the Head; Digest as before, and draw off by gentle Fire the same quantity of Spirit of Wine, which at first you put on, which keep close stopp'd for Use.

Its Operation is Diaphoretic. It is given in Convulsions, Cramps, Palsies, Lethargies, Apoplexies, and Histerical Maladies.

Its

Its *Dose* is from one Dram to two or three, in a proper Vehicle.

Observe, That after the same Method with the two forre-going Spirits, you may make the Spirits of all Herbs and Flowers, &c. adding so much Water as is sufficient to keep them from burning.

To make Cordial Waters.

TAKE of dried Orange-Peel two Pounds; of the Tops of Clary (in Flower) two Handfuls; of French-Brandy four Gallons; of Spring-Water three Gallons; put them into a Copper Alembec, and draw off three Gallons and a half of the Spirit; then change the Receiver, and draw off one Gallon more, in which dissolve four Pounds of fine Sugar, and mix it with the first drawn, and clarify all with the Whites of Eggs.

After this manner you may make Cinnamon Water, Citron Water, &c. If you would draw Spirit of Saffron, you

you cannot allow less than two Ounces of Saffron to each Gallon of Brandy.

Observations.

*Spir. Vin.
Rectificat.*

IF you have a great quantity to rectifie, you may put several Parcels to work in a digesting Furnace, in five or six Vessels, and you may have of pure rectified Spirit two or three Gallons in twenty four Hours time; or it may also be rectify'd in a Copper-Still, with its Refrigeratory.

*Spir. Vin.
Tartari-
zat.*

If you let it stand thirty or forty Hours, upon the Salt of Tartar in Digestion, before you begin the Distillation, the Spirit will the better imbibe the more Subtile Part of the Salt.

*Spir. Vin.
Tartar.*

The Distill'd Vinegar you use in this Operation, ought to be rectify'd so often, till it leaves nothing in the bottom of the Vessel, in which it is rectify'd, but a little white Salt.

*Sdir Co-
pha.*

In this Operation exceed not the second Degree of Fire, nor draw off above three parts of Spirit, before you take off the Receiver, which you may do while the

the Fire is still under it. Then put the Receiver on again, and without supplying the Fire any more; let what will come off, till all is cold, which will be about a Pint more, and is a pretty Water to wash your Fingers and Mouth after Meals.

CHAP. IX.

Of VINEGAR.

WINE becomes eager by a second Fermentation; for that causeth the Loss of some of its most Subtile Sulphureous Spirits, by which Debilitation the Acid Salts predominate and fix the rest of the Spirits remaining in the Wine.

Destillation of Vinegar.

PUT of good Wine Vinegar into a large Retort, or Body fitted with a Head, what quantity you please, so that one third part remain empty; place it in a Sand Furnace, and with a Fire of the first Degree, draw off a fifth part

part, which keep by it self, for it will serve for some Uses ; then increase the Fire to the second Degree, and so continue till all is Destill'd, except a small quantity left in the bottom of the Vessel, of the Consistence of Honey. When all is cold, take off the Receiver, and if you would rectifie it, put it into a clean Vessel; set it in the same Degree of Fire, to separate more Phlegm, and in every thing proceed as before, till you come almost to a dry bottom, which however must not be urged too far, for fear it should give an Empyreum to that which is already destill'd.

Its chief Use is for the Dissolutions and Precipitations of several Bodies.

The Concentrated Spirit of Vinegar.

PUT Destill'd Vinegar upon Filings of *Venus*, or to that Scoria of *Venus* which the Brasiers call *Spittle-Dust*, and make it into a Paste; let it stand some time without Heat, to penetrate the *Venus*; evaporate over a very gentle Fire, till you begin to smell the Fumes of the Vinegar; then take it presently away, and imbibe it again; let it stand again

again to imbibe, without Heat, and then evaporate as formerly ; do this so often till you perceive an eager Scent at the beginning of the Evaporation, which signifies the *Venus* is satiated with the Destill'd Vinegar : Put this satiated Calx into a Retort ; place it in a Sand Furnace, fit to it a Receiver, and lute well the Joint with a wet Bladder, give it the first Degree of Fire for two Hours, then increase it to the Second two or three Hours more, and so to the third three Hours longer ; at last give it the fourth Degree for two Hours more, then let all cool, and in the Receiver you will have a concentrated Vinegar, which is call'd *Spirit of Vinegar*. You may still separate the more Phlegmatic Part by Rectification. It has all the Properties of Destill'd Vinegar, but will perform any Operation with more Force and in much less Quantity.

Observe, That the same *Venus* will serve several times for the Concentration of more Destill'd Vinegar.

CHAP.

C H A P. X.

Of T A R T A R.

IT is the Essential Salt of Wine, which after Fermentation separates and adheres to the sides of the Casks. It is Red and White; the White contains less Earth than the Red; and is therefore preferable to the Red; the best white Tartar is that of Rhenish-Wine, which comes from Germany: The Lees of Wine also contain much Tartar, which being dry'd and calcin'd, are call'd *Cineres Clavellati*, out of which a Salt of Tartar may be Extracted.

Chrystals, or Cream of Tartar.

TAKE of Crude Tartar what quantity you please, boil it in Water, till the Parts which are capable of Dissolution be entirely dissolved; run the Liquor, whilst it is hot, through a Flannel Bag into an Earthen Pan, and Evaporate till a Pellicle appears: Then set it in a cold place, and suffer it to stand quiet two or three Days: Afterwards decant

decant the Liquor, and you will find the Chrystals adhere to the sides of the Pan, scrape them off, and evaporate the rest of the Liquor, as before, and set it again to shoot into Chrystals; repeat the Evaporation till all the Chrystals are shot.

Its Operation is Cathartic and Diuretic.

Its Dose is from half a Dram to one Ounce.

The fix'd Salt of Tartar.

TAKE what quantity of Crude Tartar you please, calcine it in a Pot (or Glass House) or you may put three or four Pounds of it in strong brown Paper, which tye up with Thread, and wet it with Water; then put it upon some burning Charcoals, and bury it with more Coals; there let it continue till all that is Combustible be consum'd, and you will find the calcin'd Tartar in an entire Lump. Dissolve it in warm Water, then filter and evaporate it to Dryness, in a clean Iron, or Earthen Pan, and that which remains is the fix'd Salt

Salt of Tartar ; which may farther be Purify'd by Dissolution, Filtration, and Evaporation, till in the Dissolution it leaves no Faces.

It is a good Aperitive Salt ; and us'd to draw Tinctures from Vegetables and is given in all Obstructions.

Its Dose is from fifteen Grains to one Dram.

Some think it of the same Use with every fixt Vegetable Salt.

Let this Salt be laid in a Cellar, or other cool moist place, and it will attract the Air so as to Liquefie it, which after Filtration we call Oil of Tartar, *per deliquium*.

It is endued with all the Virtues of the Salt, and is sometimes dropt in Lilly, Bean-Cod, or Orange-Flower-Water, to clear the Complexion.

Soluble.

Soluble Tartar.

MIX four Ounces of Salt of Tartar, with eight Ounces of Cream of Tartar, and pulverize them together; put them into an Earthen Pan, whereinto you have pour'd three Pounds of Spring-water; boil them till they are dissolved, and remember to stir them now and then. Filter the Dissolution whilst it is warm; Evaporate to Dryness, and keep it in a Glass well stoppt.

Its Operation is Cathartic and Diuretic.

It is given in Obstructions, Cachexies, and Dropsies.

Its Dose is from one Scruple to a Dram, or a Dram and an half, in Broth or any other proper Vehicle.

Chalybeated Soluble Tartar.

TAKE half a Pound of the Tincture of Tartar made with Steel and put it into a Glass Body; pour upon it

S two

two Ounces of the aforesaid soluble Tartar; set the Glass in a gentle Heat of Sand to Evaporate; stir it about sometimes with a clean wooden Spatula; and when it is dry, you will have a black Powder, which keep in a Vial well stoppt.

It is a good Aperitive, and is Endow'd with all the Virtues of the Tincture of Tartar, with Mars; according to the description in the Chapter of Mars.

Its Dose from one Scruple to one Dram, or one Dram and half.

Chalybeated Tartar.

POur three Pints of Spring-water into an Earthen Pan, and set it over the Fire to boil; as soon as it boils, put in half a Pound of Chrystals of Tartar, and half an Ounce of *Vitriolum Martis*, (finely powdered apart) and afterwards ground together. Let them boil a quarter of an Hour, stirring them with a wooden Spatula, till they are dissolved: Then strain the Mixture, boiling hot, through a Cotton Bag, into a clean Pan, and set it in a cold place

place to shoot into little Greenish Chry-
stals.

It is endued with the Qualities of the
fore-going Preparations; and its Dose
from one Scruple to one Dram.

Emetic Tartar.

TAKE Cream of Tartar half a Pound,
Crocus Metallorum two Ounces;
let them be very finely powdered, and
after they are well mixt, put them into
a Glaz'd Pot, and add two Pounds of
Spring-water; let them boil seven or
eight Hours; stir them often, and as the
Water wastes, supply it; take off the
Mixture from the Fire boiling, and run
it presently through a Flannel Bag;
then Evaporate two Thirds in a Glass-
Body in Sand, and set it in a cold place
to shoot; separate the Superfluous Wa-
ter, and Evaporate as before; gather
the Chrystals, dry them gently, and keep
them in a Vial for Use.

It is a gentle Emetic.

Its Dose from three, to ten or twelve
Grains.

The Soluble Emetic Tartar.

PUlvcrize four Ounces of Chryftals of Tartar; with one Ounce of *Crocus Metallorum*, grind them well together, and put them into a Glafs-Body. Pour upon them half a Pound of Spirit of Urine; and when the Ebullition is well over, add twelve Ounces of Spring-water. Boil them in a Sand Heat seven or eight Hours, fupplying the Liquor as it confumes. Take it from the Fire as hot as you can, and run it through a fine Flannel Bag; then Evaporate it gently, till it is dry, and keep it in a Vial for Ufe.

It is a very good Emetic.

Its Dofe from four to fifteen Grains, in Broth, or thin Water-gruel.

The Emetic and Cathartic Salt of Tartar.

TAKE of Salt of Tartar half a Pound, *Crocus Metallorum* two Ounces; make

make them both into fine Powder, and mix them well; put them into a Crucible, and let them melt together half an Hour; then take it from the Fire, and dissolve it in clean Water; Filter the Dissolution, and Evaporate till a Skin appears; Then drop gradually into it Oil of Vitriol, till the Ebullition ceases, and over a gentle Heat of Sand Evaporate to dryness; stir it in the Evaporation with a Glass Spatula, or clean Tobacco-Pipe; and when it is cold, put it up into a wide-mouth'd Vial, well stop't, for Use.

Its Operation is Emetic and Cathartic.

It is a *Febrifuge*, given with good success in Tertian and Quartan Agues, also in Dropsies, Scurvy, Jaundice, and Hypochondriac Melancholy.

Its Dose is from three, to fifteen Grains.

S. 3. Vitrio.

Vitriolated Tartar.

PUT what quantity of Oil of Tartar you please into a Glass Cucurbit, drop gradually upon it Rectify'd Oil of Vitriol, till the Ebullition ceases: Then Evaporate the Humidity in a gentle Heat of Sand, and there will reside a very white Vitriolated Tartar, which keep in a wide-mouth'd Glass, well stop'd.

It is a little Cathartic and Diuretic; and a good Aperitive, given in Quarters, in Scrophulous and Hypochondriacal Cases.

The Soap of Tartar.

TAKE Rhenish-Wine, Tartar, or Cream of Tartar, and Salt Petre, of each one Pound, in Powder; mix them well together, and put them into a red hot Crucible, by a Spoonful at a time; when 'tis melted take out the Mixture, with a little Iron Ladle, and put it into a warm Earthen Pan, adding to it so much warm Water as is necessary to dissolve it; Filter and dry it
into

into a Salt, and grind it into impalpable Powder, or as fine as possibly you can; then put it into a wide-mouth'd Glass, and expose it to the Air, till it is a little moistened, which it will sufficiently be in sixteen, eighteen, or twenty four Hours, according to the moistness or dryness of the Weather. Then put to each Pound of the Salt four Ounces of Rectify'd Oil of Turpentine; stir them well together with a wooden Spatula, till they seem to be Incorporated: Then set the Mixture aside, and cover it, to keep out the Dust; stir it well two or three times a day, till you perceive the Oil and Salt Incorporated, and of the Consistence of a Syrup: If it wants Oil to make it of that Consistence, add more.

This Soap is an excellent Diuretic, and something Cathartic; and is given in the Stone and Gravel in the Bladder or Kidneys.

Its Dose from one Scruple to a Dram, in a little fine Sugar.

It is call'd the Corrector of Vegetables; and the chief Ingredient which

Corrects the Opium in *Starky's*, or *Matthews's* Pill.

*The Destill'd Oil and Spirit of
Tartar.*

FILL an Earthen, or Coated Glass Retort, half full with Cream of Tartar; place it in a Reverberatory Furnace; and Lute to it a Receiver; Let the Fire of the first Degree be for three or four Hours, then increase it to the second three Hours longer, and on to the third three or four Hours more; at last to the fourth Degree, where keep it till no Fumes ascend into the Receiver, in which you will find a Foetid Oil and Spirit; you may separate the Oil by Filtering it through a Coffin of Paper; then put the Spirit in a long-boll'd Retort, and in a gentle Heat of Sand Rectifie it, and separate the Phlegm which comes over after the Subtile Spirit.

To make this Spirit more Aperitive and Excellent; to three parts of the Oil and Spirit which your Destillation produced, put one part of *Spiritus Nitri Dulcis*

Dulcis ; shake them well in the Receiver, and put them carefully into a clean Glass Retort, which set in a Sand Furnace ; fit and lute on a Receiver, and give it a Fire of the first Degree, till the Lute be dry ; then advance to the second, in which you will have a most penetrating and grateful Spirit, which is one of the most powerful Diaphoretics that I know. It is also Diuretic and Anodine.

It is given in the Palsy, Epilepsy, Asthma, Hysterical Maladies, Scurvy, and in Fevers., with good Success.

Its *Dose* is from two Scruples to two Drams in any proper Vehicle.

A Volatile Salt of Tartar.

TAKE the Lees of Wine, and dry them gently, when dry, beat them into gross Powder ; fill a Glass coated, or Earthen Retort, half full with them : Place it in a Reverberating Furnace ; give it a gentle Fire to drive off the Phlegm which first comes over ; and when you perceive Fumes to rise, fit and lute on the Receiver, augmenting

menting the Fire gradually, till at last, with the most extream Degree, no more Fumes will arise. Then let all cool, and take off the Receiver, in which you will find a whitish Liquor, which contains the Volatile Salt, and upon it will swim a little Foetid Oil ; put it into a Vial, and with a little clean Water rinse out the Salt which adheres to the sides of the Recipient. and put it to the rest. Then put them into a Coffin of brown Paper, and the Spirit with the Salt will pass through, and leave the Oil in the Coffin.

Put the Spirit into a long Matraass, fit to it a Head and Receiver ; lute the Joints well, and with a gentle Heat of Sand sublime the Salt into the Head ; when it is pretty well charged, take off that Head, and presently fit on another, and continue the same Degree of Fire, till the Salt begins to melt, then change the Head, and augment the Heat a little to destil the Volatile Spirit of Tartar ; when the Drops are insipid, take off the Receiver, and keep the Spirit from the Air in a Vial well stoppt, because of its Volatility, as also the Salt ; for if the least Air be admitted, the Salt will relent,

Its

Its *Operation* is Diaphoretic and Diuretic.

Its *Dose* from ten Grains to half a Dram; it is a Medicine much esteemed by many Physicians; and is given in the Palsy, Apoplexy, Epilepsy, Tertian and Quartan Agues; it opens all Obstructions, and provokes the Terms: The Volatile Spirit is some of the Phlegm impregnated with the Salt, and endued with the same Virtues, and given from ten Drops to two Scruples.

Another Volatile Salt of Tartar.

TAKE the satiated Salt of Tartar (described to make the true Tartariz'd Spirit of Wine) fill a coated Retort half full with it; place it in an open Furnace, lute on a Receiver, and give it a gradual Fire; observing the same Method, as in the former Operation, both in the Destilling and Rectification.

Tincture

Tincture of Tartar.

PUT a pound of Salt of Tartar into a Crucible; Place it in a Melting Furnace, and let it heat gradually, till it is of a white melting heat; cover it well with Coals, and keep it in the most extream Degree of Fire, five or six Hours; then pour it into a warm Mortar, and whilst warm, powder it, and put it into a Matrafs, heated upon warm Sand to preserve it from breaking with the hot Salt. Then pour upon it twenty Ounces of Tartariz'd Spirit of Wine, invert and lute well to it another Matrafs to make it a double Vessel; make a gentle Fire, and let it simmer six or seven Hours, and in that time it will acquire a good Tincture, which when cold, put into a Vial, and keep it well stop'd.

Its *Operation* is Diaphoretic and Diuretic. It is an excellent Aperitive, and a good Anti-scorbutic.

Its *Dose* from ten to fifty or sixty Drops, in any convenient Vehicle.

The

The Secret Corrector.

I Have before taught you how to make a very good Soap of Tartar; but this, which follows, I have kept many Years for private Experiments, and indeed it has afforded me abundance of Satisfaction.

Take Cream of Tartar, and purified Nitre, *ana*, three Pounds; powder and mix them, and put them by Spoonfuls into a Red hot Crucible; when it is melted, dissolve it in warm Water, Filter the Dissolution, and Evaporate to a dry Salt; powder this Salt, and put it into a clean Glass-Body, and add three times its Weight of pure destill'd Vinegar (by half a pint at a time) shake the Glass, and place it in a Sand Furnace, then draw off the Liquor, which will be an insipid Phlegm. Dissolve the Salt again in Spring-Water, filter and evaporate as before; powder the Salt, and put it into a clean Body, adding three times its Weight of pure destill'd Vinegar, and draw it off as before. Repeat these Operations till the Salt has no Faces, and the Destill'd Vinegar comes off as Acid as when put on.

This

This is the foliated Salt of Tartar, which readily dissolves in Spirit of Wine.

To this foliated Salt, put so much Spirit of Wine as will dissolve it; let it settle, and decant the Spirit, draw off the remaining Spirit by a gentle Heat. Take one pound of this Salt, and of *Offa Alba* (made with Spirit of Wine, and Spirit of Urine) half a Pound; grind them well together, and add a Pound and a half of Spirit of Wine, impregnated with any Essential Oil (according to your intended Use) as Oil of Turpentine, Juniper, Sassafras, Mint, Majoram, Savine, Cloves, Cinnamon, &c. Put them into a Body, with its Head and Receiver, lute the Joints, and draw off the Spirit of Wine with so very a gentle Heat in Ashes, as will only elevate the Spirit, and leave the Oil with the Salt; impregnate the Spirit with more Oil, and return it upon the Salt; repeat the Operation till your Salt is become a Soap. This is the Grand Secret Corrector of Vegetables, Animals and Minerals. For the Use of it, I refer you to the Ingenious Dr. George Starkey's *Corollary Appendix to his Pyrotechny Asserted and Illustrated*.

Obfer-

Observations.

IF you dry the crude Tartar in an Oven, till it is a little scorcht (not calcin'd) to evaporate some of its acid Particles, it will dissolve more easily, and the Chrystals will be larger and whiter than otherwise they would be. *Cream of Tartar.*

The first Evaporation may be made in a clean Iron Pan, in which the Liquor ought to be kept stirring when it begins to coagulate, till the Salt is quite dry; and if you design a farther Purification, and that it is not so white as you expect it; put it into a Crucible, and set it in a little Charcoal Fire (so that it do not melt) and in a quarter of an hours time it will be very white. *Salt of Tartar.*

If you desire it to chrySTALLIZE, evaporate only till a Scum appears; then in a clean Earthen Pan, or wide-mouth'd Glass, set it in a cold place to shoot into Chrystals, which must be carefully dry'd, and kept close stopt, because they are apt to dissolve. *Soluble Tartar.*

Be careful in the drying of it, that it be not burnt, because burning deprives it of its Cathartic Quality. *Chalybeate Sol. Tartar. It*

Chalybeat. It may be made with the Vitriol, or
Tartar. Filings of *Mars*; if you put one Ounce and a half of Filings in the place of half an Ounce of Vitriol; and bake the common Chrystals of Tartar to a brownness, it will dissolve with more ease, and the Chrystals will be fairer.

Emet. It may be made with *Crocus Metallorum*; *Vitrum Antimonii*, Flowers of Antimony, or *Mercurius Vita*. The Cream of Tartar as before, being baked, will render the Emetic Chrystals more large and fair.

Soluble The Spirit of Urine partly satiates
Emet. the Acidity of the Tartar, by which it
Tartar. more readily dissolves. Take care to dry it without burning.

Emet. Cathart. Salt This Evaporation will be best per-
of Tartar. formed in a Glass Cucurbit, because the Inspissation of the Oil of Vitriol would prey upon the Glasing of an Earthen Vessel, to the Prejudice of the Medicine.

Vitriolated Tartar. It may be made of pure Salt of Tartar, instead of the Oil, Inspissating the Oil of Vitriol upon the Salt, and stirring it

it with a Glafs Spatula, or clean Tobacco-Pipe, till the Fermentation is over. But take care you do not evaporate too much, lest you deprive it of the Acidity it ought to retain.

The Salt may be evaporated in a clean Soap of Iron Pan; and if it be a little moisten-^{Tartar.} ed by the Air, before the Oil is put to it, their Union will be facilitated thereby. You may also Destil the Oil of Turpentine from Aromatic Herbs and Spices, to give it an agreeable Scent. The older this *Sapo* is, the better 'tis: I have several Ounces of it by me now, which I made in the Year 1665, and I value it as much as its Weight in Gold.

The Phlegm may be separated either ^{Destillat.} at the first Destillation, or in its Recti-^{of Tartar.} fication: If at the first Destillation, put on the Receiver, without Luting it, and when the white Fumes appear, change, and Lute on the Receiver.

If you can have such Lees as the ^{Vol. Salt} Juice is press'd out of by those who ^{of Tartar.} make Vinegar, it will save you the Labour of drying them, and will be altogether as good for this Operation. And if in the Rectification you desire to pre-
T serve

serve the Salt in a dry Form, you must be watchful; and when you see the Salt have the least Inclination to Dissolution, you must change the Head; presently take out the Salt, and put it into a dry Vial, well stopping it, to preserve it from the Air, which would presently dissolve it. But if so much Water come over with it, as to render it in a Liquid Form, it then has the same effect with the Salt, being given in a greater Dose.

If after the Rectification you separate the Phlegm from the Oil, and return the Volatile Spirit upon it, and put to them a third of their weight of sweet Spirit of Nitre, digest them in a double Vessel two or three Days, in a gentle Heat, then Un-lute the Vessel, and Fit and Lute on a Head, with its Receiver, and you will obtain, with a gentle Heat, a most Excellent and Penetrating Salt and Spirit.

*Tincture
of Tartar.*

Melt not less than one Pound of the Salt, because it wastes considerably, by long Fusion, and be sure that your Spirit of Wine be totally Dephlegmated, otherways your Tincture will not be full.

If

If you can have Patience, and proceed carefully, you may volatilize every Grain of this Salt: I have often done it, and with Pleasure seen the good Effects of it; in a Medicine only prepar'd by my self.

*The Secret
Corrector.*

C H A P. XI.

Of A L O E S.

IT is the Juice of a Plant called *Semper Vive*, which grows in *Egypt*, the Island of *Socotra* in the *Persian-Gulph*, in the Island of *Barbadoes* in the *West-Indias*, and other Places.

That of *Socotra* is counted the best, because they Transplant and Cultivate it, but in other places they use the Plant wild, as they find it: Every Country produces two sorts of it, *viz.* that made of the Juice which drops from the Plant by Incision, and that made of the Expressed Juice. *Hepatic Aloes* is that sort made by Incision in all Countries, and takes its Name from its similitude to the Liver.

The History of this Plant is very well worth reading ; its sudden and vast increase (even to twenty Feet high, with a Stem as thick as a Man's Thigh) and that in very few Days is very surprizing: But such a one Dr. Brown saw in the Gardens of Conte Augustino Giusto at Verona, Vid. his Travels, p. 202. And the like also was, not many Years since, in a Garden at Lambeth, Vid. Petri Borelli Observat. Cent. 1. Observat. 1.

**Extract of Aloes.*

Dissolve what quantity of Aloes Succotrine, or Hepatic, you please, in the Destill'd Water of Roses, Succory, Borage, or any other, Filter the Dissolution through a Flannel Bag, and evaporate to the Consistence of an Extract: A better Extract is made with Spirit of Wine ; but the best is made with Tincture of Tartar, which does not only correct the Crudity of the Aloes ; but that pure Salt of Tartar, the Spirit of Wine is thereby impregnated with, will preserve it in its full Virtue, and due Consistence very many Years.

Observe, That if the Aloes be very good, it will almost all Dissolve, leaving nothing

thing behind it but some dirt, which accidentally in its drying, falls into the Juice.

CHAP. XII.

Of MYRRH.

IT is a Resinous Gummy Juice which drops from a little Thorny Tree by Incision. The best is in Transparent smooth Drops, and when new, of a whitish Colour, but in time becomes yellow, but continues Transparent, and breaks with little white specks in it; such as this is not often met with: but of such as is commonly vendible, chuse that which is Yellow, or Red, Bitter, Transparent, and of a grateful Smell.

It grows in *Abyssine* in *Africa*, and *Moco* and *Asia*: That of *Abyssine* comes through *Egypt* into *Europe*; and that from *Moco* by the Caravans to *Aleppo*, &c.

Tincture of Myrrh.

PUT into a Matrafs of fine Myrrh in Powder one Pound, of Spirit of Wine four Pounds; invert another Glas

T 3 into

into the Mouth of the Matrafs, to make a double Vessel; lute the Juncture, and set it in a gentle Heat of Sand, to Extract its Tincture.

It is Sudorific and Aperitive. It is given in the Apoplexy, Lethargy, and Palsy, is good to Expedite Womens Labour, and is often apply'd outwardly.

Its *Dose* is from eight to twenty four Drops in a proper Vehicle.

Oil of Myrrh by Destillation.

FILL a Retort half full with coarse Myrrh; place it in a Sand Furnace, and Lute to it a Receiver; give it Fire by Degrees, to the greatest height; when the Fumes cease, let out the Fire, and in the Receiver you will have a Fœtid Oil, and an Acid Spirit.

The Oil is Externally apply'd, to bring stubborn Ulcers to Suppuration. The Spirit is Diaphoretic and Diuretic.

Its *Dose* is from eight to twenty four Drops, in a proper Vehicle.

Oil of Myrrh, per deliquium.

BOil Eggs till they are hard, split them in the middle, and take out the Yelks; fill the Cavity with fine Myrrh in Powder; place them upon little Sticks of about an Inch and a quarter long, three or four of them being prickt into the Egg, set them in a clean Earthen Pan, which place in a Cellar, or some such moist place, and there will drop from them into the Pan, a Liquor, which is call'd *Oil of Myrrh*.

Its Use is to take away Spots and Blemishes on the Skin, outwardly apply'd.

Observations.

SHake the Myrrh and Spirit of Wine *Tincture of Myrrh.* well two or three times every Day, and let it be charged with a full Red before you pour it off from the Myrrh, which will require two or three Days time.

T 4

You

*Oil and
Spirit of
Myrrh.*

You may Rectifie the Oil and Spirit together, and then separate them; then put to the Spirit a fourth part of its weight of *Spiritus Nitri Dulcis*, and Rectifie them; by which the Spirit will be render'd more agreeable to Smell and Taste, and made more Aperitive.

*The Oil
per deli-
quium.*

It is improperly call'd Oil, being only some of the most subtile Parts of the Myrrh Liquify'd by the Moisture of the Air. If any Dirt has accidentally fallen into the Deliquiated Oil, you may Filter through a Paper.

CHAP. XIII.

Of SAFFRON.

IT is a Flower which comes to its Perfection in the latter end of September, and in October. That of *England* is accounted the best, both for the Largeness of the Leaf, its Fragrancy and Colour. The *English* have also a way to Preserve it, exceeding that of any other Country.

Tincture

Tincture and Extract of Saffron.

PUT four Ounces of good *English* Saffron into a Matraile, with twenty four Ounces of Spirit of Wine; let them stand in a gentle Heat of Sand forty eight Hours, sometimes shaking them, and you will find the Spirit well charged with the Tincture of the Saffron; Pour off the Tinged Spirit, and put on one Pound more, proceeding as you did before, and you will have a Second Tincture, but not altogether so deep as the First; put both the Tinctures into a Cucurbit; place it in Sand; Lute on its Head and Receiver, and in a gentle Heat draw one half of the Spirit of Wine off, and that which remains behind will be a strong Tincture.

This Tincture is made into an Extract by Evaporating it into a due Consistence.

Observations.

*Observations.**Tincture
of Saffron.*

After Decantation of the Tinged Spirit, you may add new Spirit of Wine, as long as it yields any Tincture, and then put all the Tinged Spirits into a Cucurbit, and draw off, till you leave not above twenty Ounces of Tincture in the Cucurbit.

Extract.

In a very gentle Heat of Ashes Destil off as much Spirit of Wine as you can, without burning the Extract; then pour it into the bottom of a Glass cut shallow, or a clean smooth Earthen Vessel; set it upon so much Hay or Straw as to stand firm in a *Balneum*; and in that Heat keep it continually stirring, till it is Evaporated into an Extract.

C H A P. XIV.

Of ELIXIRS.

ELixir is the Name of a Medicine intended (by Adepts) to Heal all Humane Diseases, and remove the Impurities

purities of imperfect Metals. But my design is only to handle those Vegetables whose Essential Parts being separated from the grosser and more Feculent, by proper Menstruums, and the Industry of the Artist, will yield greater Medicines by the Union of their Virtues, and so may not improperly, tho' subordinately, be called by the Name of *Elixirs*. And first of *Elixir Proprietatis*.

Elixir Proprietatis, with Oil of Sulphur.

TAKE of the best Aloes, fine Myrrh, and *English* Saffron, of each one Ounce ; let the Myrrh and Aloes be beaten into fine Powder, and the Saffron cut into small pieces ; put them into a long Body, or Bolt-head, and put to them nine Ounces of Tartariz'd Spirit of Wine ; make the Vessel double, fit for Circulation, and set it in a gentle heat for seven Days, shaking it once or twice a Day ; then unlute the Vessel, and put to the Tincture three Ounces of *Ol. Sulph. per C.* by an Ounce at a time ; and when all is in, shake them well ;

well; Lute on the other part of the Circulatory, and let them stand in warmth fourteen Days, agitating them as before, once or twice a Day; then let them cool, and press out all the Moisture through a strong Cloth; let it stand till settled; and by Decantation separate the Elixir from the Fæces; put it into a Vial, and keep it close stopt for Use.

Its *Operation* is Diaphoretic and Aperitive: It Fortifies the Heart, and Purifies the Blood, creates an Appetite, and helps Digestion; and some account it a great Preservative against Pestilential Air; with many other Virtues.

Its *Dose* is from ten, to fifty or sixty Drops, in Wine and Water, Beer or Ale, Broth or Spring-water, or any other Vehicle appropriated to the Disease you would remove by it.

Elixir Proprietatis, with Tincture of Tartar.

TAKE of Select Myrrh, Aloes and Saffron, *ana* one Ounce, beat and cut
as

as before; put them into a Vessel of Circulation, and pour upon them twelve Ounces of Tincture of Tartar; place them in a gentle Heat, to stand twenty one Days, shaking the Mixture every Day; then let it cool, and press it out as you did the former; let it settle; Decant the Elixir from the Fæces, which put into a Vial, and stop it for Use.

Its *Operation* it Diaphoretic and Diuretic; and is said to have all the good Qualities of the former, and to be more Aperitive, and a greater Sweetner of the Blood.

Its *Dose* is from one Scruple, to one Dram and half.

*Elixir Proprietatis, with Spirit of
Harts-Horn.*

TAke of the best Myrrh, Aloes and Saffron, *ana* one Ounce, Tartariz'd Spirit of Wine eight Ounces, Spirit of Harts-Horn four Ounces, and proceed in every thing as in the preceding Process.

This

This is also Diaphoretic and Diuretic, and endued with the Virtues of the former, but more effectual in Hysteric Vapours.

*Elixir Proprietatis, with Sal. Volat.
Oleosum.*

TAKE of choice Myrrh, Aloes, and Saffron, *ana* one Ounce; place them in a Circulatory Vessel, and put to them of Tartariz'd Spirit of Wine four Ounces, and of *Sal. Vol. Oleosum* nine Ounces, and proceed in every thing as before.

It is Diaphoret. and Diureset. is proper in all Cases where the former is useful, and more agreeable both to Scent and Taste.

Its *Dose* the same with the other.

Anti-Convulsive Elixir.

TAKE of Spirit of Salt Armoniac (made with Salt of Tartar) four Ounces;

Ounces ; of Tartariz'd Spirit of Wine eight Ounces, unrectify'd Oil of Ambar two Ounces, and two Drains of Oil of Caraway-seeds ; put them into a Retort, and destil in a gentle Sand Heat. Return the Oil and Spirit upon the Residence, and Re-destil ; repeating the Cohobations till the Spirit, Oil and Salt are perfectly united. Then put into a Matrafs half an Ounce of Cassummunnair, one Ounce of Russia-Castor, two Ounces of the Seeds of Male-Pæony, and one Dram of Assa-fœtida ; pour the Spirit upon these Ingredients, set the Matrafs in a digesting Heat four or five Days, and then decant the Elixir.

The *Dose* is from three to threescore Drops in Black-cherry Water, &c.

An Opening Martial Elixir.

TAKE of Salt Armoniac and Salt of Tartar, *ana* one Pound ; dissolve them (separately) in a sufficient quantity of Water ; mix the Dissolutions, and pour them upon one pound of Filings of Iron in a Matrafs, which stop close, and let it stand in a gentle Heat two or

or three Days, shaking it often every Day; then let it settle and decant it carefully. Into three Pounds of this Liquor, put of Myrrh, Aloes, Saffron, and the dry'd Leaves of Savine, *ana* two Ounces; let them digest three Days, shaking the Matrafs as before; decant the Liquor, and to the Residence put one Pound of rectify'd Spirit of Wine, and let them digest forty eight Hours; then decant the Liquid, and with your Hand press the Residence through a straining Cloth: Mix this Spirit and the former Liquor, shake them, let them settle, and decant the clear for Use.

It powerfully opens all Womens Obstructions, and is of great use in Hysteric and Hypochondriacal Cases.

The *Dose* from twenty to fourscore Drops.

The Anti-Pestilential Elixir Proprietatis.

TAke of Myrrh, Aloes, Saffron, and Camphor, *ana* one Ounce, *Virginia*

nia Snake-Root and Cochineal; and half an Ounce; Powder what is to be powdered, mix the Ingredients, and put them into a Matraiss; pour upon them *Spiritus Nitri Dulcis* twelve Ounces, and let them stand in Digestion twenty one Days, observing every thing as in the foregoing Process.

This is said to be the most powerful Medicine against the Plague, and all Contagious Diseases, that is yet known: It expels Wind, and is an excellent Remedy against the Cholic, and all Gripings of the Stomach and Bowels; a great Aperitive, and gives Ease in the Stone, both in the Reins and Bladder.

Its Operation is Diaphoretic and Diuretic.

Its Dose is from half a Scruple to one Dram, or one Dram and a half, in any proper Vehicle.

The Volatile Elixir Proprietatis.

IT is the foregoing Elixir with Spirit of Wine nine Ounces, and Oil of Sulphur three Ounces, with the same

Proportions of Myrrh, Aloes and Saffron, which after Digestion must be Destill'd in a gentle Heat, with two Cohobations of the same Spirit, and must be drawn off with three Days Digestion between each Cohobation.

It has the same Virtues with most of the Preceeding Elixirs, and is more agreeable to the Palates of many People.

Its Operation is Diaphoretic and Diuretic.

Its Dose from ten Drops to a hundred, in any proper Vehicle.

Elixir Vitrioli.

TAKE Galangal one Ounce and a half, Calamus Aromaticus, Mint, and Sage dryed, *ana* half an Ounce, Cinnamon, Cloves and Ginger, *ana* three Drams, Nutmegs and Cubebs, *ana* two Drams, Lignum Aloes, and Limon-peel, *ana* one Dram, white Sugar-Candy, three Ounces, all Pulveriz'd; put them into a Matrafs, and pour upon them Oil of Vitriol one Pound, Spirit of Wine one Pound and an

and half: Invert another to make it a double Vessel; lute the Joint, and set it in a gentle Heat to digest, fifteen or twenty Days. It is accounted a good Stomachic.

Its Dose from ten, to sixty or seventy Drops.

Elixir Peoniae.

TAke of the *English* Roots of *Palma Christi*, *Pyrethrum*, ana one Ounce, Mistleoe of the Oak, Fennel-Seeds, *Anacardia*, ana six Drams, Rosemary-Flowers, *Stachas Arab.* Lavendar, ana three Ounces, Shavings of Harts Horn, Elks-Hoof, Man's Skull, ana one Dram and a half, Marjoram one handful, rectify'd Spirit of Wine two Pounds; Digest these fourteen Days, and then destil in *Balneo Mariae*; to which add the Roots, Flowers, and Seeds of *Paony*, ana one Ounce, *Spec. Diamosc. Dulcis*, *Xyloaloes*, of each half an Ounce; digest them a Month, and filter.

To twelve Ounces of this Tincture add one Dram and a half of Salt of *Paony*, and four Ounces of Spirit of *Vitriol*

U 2

Rectify'd

Rectify'd and Impregnated with Native Cinnabar. Then Circulate them into an Elixir.

Otherways 'tis made as followeth.

TAKE the Root of *English Palma Christi Pyrethrum*, Mistletoe of the Oak, Fennel-Seeds, *Anacardia*, Rosemary-Flowers, Marjoram, *Stachas Arab. Castor*, and Lavendar, in the foregoing quantities: And (instead of the Shaving of Harts-Horn, Elks-Hoof, and Man's Skull) take of the Aromatic Spirit of Harts-Horn, hereafter mentioned, (*vid. Chap. of Harts' Horn.*) half an Ounce: Digest them all in two Pounds of Rectify'd Spirit of Wine fourteen Days; at the end of which destil them in *Balneo Marie*, or a gentle Heat of Sand or Ashes, and to every Pound of this destill'd Spirit add, four Ounces of Rectify'd Spirit of Vitriol, the Roots, Flowers, and Seeds of *Paony*, and one Ounce; *Spec. Diamosc. Dulcis*, *Xyloaloes*, of each half an Ounce, and with one Dram of Salt of *Paony*, Circulate into an Elixir.

Elixir.

Elixir Salutis.

TAKE of the Leaves of Sena half a Pound, Jalap in Powder four Ounces, *Enula Camp.* also in Powder, and Liquorish, *ana* two Ounces, Juniper-Berries, Anniseeds, and Coriander-Seeds, *ana* one Ounce; Cream of Tartar one Ounce and a half; Honey and Manna, of each two Ounces; slice the Liquorish; put them into a Glass Body, and put to them *French-Brandy*, or clean *English Proof Spirits*, four Quarts; lute on a Glass to make a Circulatory, and let them stand in a gentle Heat of Sand two or three Days; then pour off the Liquor, and press it out from the Ingredients, and let it stand in a Vessel close stopt twenty four Hours to settle; then by gentle Inclination, pour it from the Faeces, and keep it well stopt for Use.

Its *Operation* is Cathartic and Diuretic.

Its *Dose* is from half a Spoonful, to three or four Spoonfuls, either by it self, or in any convenient Vehicle.

U 3

Elixir,

*Elixir, or Balsamum Polychrestum,
different from that in the London
Pharmacopœia.*

TAKE of Sarsaparilla four Ounces,
China-Root, and Guaiacum ras-
ped, *ana* two Ounces and a half; let the
Sarsaparilla and China be grossly pow-
dered, put them into a Matraass, with
three Pounds of Tartariz'd Spirit of
Wine; stop the Mouth of the Matraass
with a little Egg, or Bolt-Head; lute
it well, and set it on warm Sand, to
digest three Days, shaking it now and
then. Then let it cool, pour out the
tinged Spirit, and press what you can
from the Ingredients; put the tinged
Spirit into the Matraass again, and add
to it of Gum Guaiaci in Powder, nine
Ounces; lute up the Glass, and let it
stand in Digestion three or four Days,
and shake it often every Day. Then
let it cool and settle, and pour off the
Tincture from the Sediment; put the
Tincture into a clean Matraass, and put
to it one Ounce of Balsam of *Peru*, and
half an Ounce of Balm of *Gilead*; mix
them with the Tincture by much Agi-
tation; let them stand in Digestion, as
before,

before, three or four Days longer, and shake them often; when the Balsam is well incorporated with the Tincture, pour it off clear into a Vial, which stop and keep for Use,

It is Cathartic, and sometimes Diaphoretic.

Its Dose is from ten, to seventy, eighty, or a hundred Drops, in any proper Vehicle.

To these Elixirs there needs no other Observation than to make good Choice of the Ingredients, to lute the Joints of the Circulating Vessels well, and to moderate the Heat so, as not to endanger the breaking of them.

Apoplectic Balsam.

TAke of Oil of Cinnamon, one Dram; of the Oils of Cloves, Lavendar, Marjoram and Rhodium, *ana* two Scruples; Oil of Rue one Scruple; of Amber-grease half a Dram; of Musk fifteen Grains, of Civer eight Grains, of Juice of Limons fifty Drops, Oil of Mace by Expression, and Balsam of Peru,

and three Ounces; of Liquid *Syrax* one Ounce. First mix them in a Marble Mortar; afterwards grind them upon a Stone till they are entirely mixt. Then put the Balsam into a wide mouth'd Glass, ty'd close with a Bladder,

CHAP. XV.

Of O P I U M.

IT is a Juice which destils from the Heads of Poppies by Incision, found in the Kingdom of *Cambai*, about *Grand Cairo* in *Egypt*, and *Thebes* in *Greece*. Some tell us of three sorts, viz. Black, Yellow, and White; but none of these come frequently amongst us, the Inhabitants of those Countries keeping them for their own Use, and sending us the exprest Juice of Poppy-heads, thickened and wrapt up in Leaves, for the Convenience of Transportation: It is properly call'd *Meconium*; such may be also Exprest from Poppy-Heads, which grow in *Italy*, and the Southern Parts of *France*, but not so strong as the former.

That

That which comes from *Thebes* is accounted the best. Chuse that which is Black, breaking with a little cast of Yellow, free from Stubs or Leaves, a little Acrimonious, of a very bitter Taste, and a disagreeable Stupefactive Scent.

Extract of Opium.

PUT four Ounces of good Opium in thin Slices, into a glass Body, wherein there are two Pounds of Spring-Water; set it in Sand, and stop the Mouth of the Body with another Glass, make Fire under it, till by gradual Heat it is made to boil, in which state keep it two or three Hours, then let out the Fire, and whilst the Dissolution is hot, run it through a Flannel Bag, and press it strongly with your Hand, into an Earthen Vessel; put that which remains in the Bag into a Matraass, in which there is a quart of Rectify'd Spirit of Wine; make a double Vessel of the Matraass, and let it stand in Digestion twenty four Hours, now and then shaking it. Then take it out, and when 'tis cool, run it also through a Flannel,

as

as before ; put the Spirit of Wine which is charged with the Gummous Part of the Opium, that the Water was not capable of dissolving, into a Cucurbit, and in a gentle Heat draw off two thirds of the Spirit of Wine, which will serve again for the same Use. Then put both the Extractions together, and in a clean Earthen Pan, with a moderate Fire Evaporate, till it is of a Consistence fit to form into Pills, which put up into a Gally-pot for Use.

It is the most certain Anodine yet known to Physicians, and is fit for any Compound Laudanum.

Its Dose from half a Grain to two or three Grains.

Dr. Goddard's Compound Extract of Opium.

TAKE of Saffron and Nutmegs, *ana* one Ounce, of Castor half an Ounce : slice the Nutmegs and Castor thin, and put them into a Matraass, with the Saffron; put to them twelve Ounces of Tincture of Tartar ; set them in a gentle Heat of Sand (with the Mouth of
of

of the Matrafs well stoppt) in Digestion twenty four Hours, shaking it often; then let it cool, and press it through a Cloth into a clean Earthen Pan; what stays in the Bag put into the Matrafs again, and put to it half a Pound of Rectify'd Spirit of Wine; let it stand warm twelve Hours, and strain it off to the other; into these Tinctures put five Ounces of the Extract of Opium, set them over a gentle Fire to Evaporate into an Extract,

It is a good Soporific, and alleviates all Pains, in what part of the Body soever.

Its Dose from half a Grain to three or four Grains.

Liquid Laudanum, with Juice of Quinces.

TAke two Ounces of good Opium, one Ounce of *English* Saffron, and one Pound and an half of the Juice of Quinces. Let the Opium be thin slic'd, and with the Saffron be put to the Juice of Quinces, in a Glass Body; some add Yest of Ale to Ferment it.

Set

Set them in a gentle Heat of Sand, to digest till the Fermentation is over, and the Saffron subsides. Then express the Juice, and let it stand to settle : when 'tis settled, pour it off by gentle Inclination ; put the Liquor into a Matraass, and put to it two Ounces of Cinnamon, one Ounce and an half of Cloves, and one Ounce of *Jamaica-Pepper* ; let them be bruised, and put them into the Liquor to stand in Digestion fourteen Days. Then again express the Juice, gently Evaporate it to a due Consistence, and put it up for Use.

Its Virtues are the same with the former.

Its Dose is from ten, to forty or fifty Drops.

Liquid Laudanum, with Tincture of Tartar.

TAKE of choice Opium two Ounces, Saffron one Ounce, Cinnamon two Drams, Nutmegs and Mace, *ana* one Dram. To these Ingredients in a Matraass, put twenty four Ounces of Tincture of Tartar ; make the Matraass

a double Vessel; Lute well the joints, and set them in a Heat of Digestion three Days, shaking them every Day. Then open the Vessel, and add to the Mixture two Ounces of Juniper-Berries bruised; Let it stand in Digestion three Days longer, then let it cool, and press it through Flannel. Put the expressed Liquor into a Cucurbit, and with its Head and Receiver Luted; set it over a gentle Fire of Ashes; draw off eight Ounces of the Spirit; let that which remains cool, and decant it gently from the Fæces, into a Vial well stoppt, which keep for Use.

Its Virtue and Dose the same with the fore-going.

Dr. Sydenham's Liquid Laudanum.

TAKE of Select Opium two Ounces, Saffron one Ounce, Cinnamon and Cloves powdered, *ana* one Dram; put them into a Matraass, and pour upon them one Pint of good Canary-wine; let the Matraass be fitted for Circulation, and set them in a good Heat of Digestion for three or four Days; then press them through Flannel; let the
Liquor

Liquor settle, and by gentle Inclination pour it into a clean Vial, and keep it for Use.

Its Operation the same with the foregoing.

Its Dose is from ten to forty or fifty Drops.

Liquid Laudanum, with Sweet Spirit of Nitre.

TAke two Ounces of the best Opium, which slice, and put into a Matrafs, with one Ounce of Saffron; and to them one Pound of *Spiritus Nitri Dulcis*; invert into the Mouth of the Matrafs another Glas; Lute it, it, and set it in Digestion five Days (shaking it about every Day) then let it cool, and drop into it (by degrees) one Ounce and an half of *Sal Volatile Oleosum*. When the Fermentation is over, Stop and Lute it up again, and let it stand three Days longer in Digestion: Then let it cool, and set it inclining to settle, and gently decant it into a Vial for Use.

It

It is an excellent and certain Anodyne; and a great Expeller of Wind, and seldom or never, (that I have yet heard of) offends the Stomach or Bowels of the Patient.

Its Dose is the same with the former.

*Liquid Laudanum, made with the
Volatile Oily Salt.*

TAke four Ounces of the Extract of Opium, put it into a Marble Mortar, grind it with half a Pound of Tincture of Tartar, which must be put to it by two Ounces at a time, grind them till the Opium is well mixt with the Tincture of Tartar; then put them into a Matrafs, and put to them one Pound of *Sal Vol. Oleosum*, upon which you must drop half a Dram of of sweet Spirit of Nitre; shake them well together, which will produce a little Fermentation; when that is over, make a Circulating Vessel of the Matrafs, Lute the Juncture well with Bladder; and set in a gentle Heat of Digestion six Days, shaking it about every Day.

Then

Then let it settle, and decant into a clean Vessel, both which keep well stopp'd for Use.

It is an Excellent Laudanum, a certain Sudorific, and a great Expeller of Wind.

Its Dose is from ten to thirty or forty Drops.

Matthews his Pill.

TAKE of the Extract of Opium of Black Hellebore, of Liquorish, and the *Corrector*, (or Soap made with Salt of Tartar and Oil of Turpentine, as before-mentioned) *ana* four Ounces. Let the Hellebore and Liquorish be made into Subtile Powder; beat and mix these four Ingredients very well; then with two or three Ounces of this Mass, mix one Ounce of good *English* Saffron, cut into small Pieces, and beat them well together, till the Saffron is perfectly mixed with the Mass, so that no part of it is discernable from the rest: Then beat and mix that as well with the rest of the Mass. If the Mass be too dry, you

you may mix with it some of the Oil which comes from the Soap, which it spues out when it stands by a long time; or in its stead so much rectify'd Oil of Turpentine as is sufficient to make it into a Mass fit to form into Pills. Then put it into a wide-mouth'd Glass, or Gally-pot, ty'd over with a Bladder or Leather.

It is a Diaphoretic, Anodine and Diuretic.

Its *Dose* is from two, to five or six Grains.

Dr. Starkey's Pill.

TAKE Extract of Opium four Ounces, Nutmegs and Mineral Bezoar, *ana* two Ounces; Saffron and *Virginia-Snake-Root*, *ana* one Ounce; beat the Nutmegs and Saffron together into a Paste; so that the Saffron cannot be discernably distinguish'd from the Nutmegs. Also let the Mineral Bez. and Snake-Root be in Impalpable Powder. Then mix all together, with half a Pound of the *Corrector*; half an Ounce of Oil of Sassafras, and two Ounces of

X Tinct.

Tincture of Antimony; let them all be well Incorporated, by beating in a Mortar: Then keep them in a Glass, or Gally-Pot, ty'd over with Bladder or Leather for Use.

This I had from the ingenious Dr. Starkey's own Mouth, in the Year 1665. a little before his Death, who then told me, he gave *Matthews* the former for a little Money; but this is it which he successfully made use of himself.

It is both more Diaphoretic, and a greater Anodine than the former; and I have hear'd it affirm'd by several Gentlemen, who have made use of it in their Practice, to be the best Laudanum they ever met with.

Its Dose is the same with the former.

Liquid Laudanum with Camphor

Take four Ounces of the best Opium, put it into a Matras, and pour upon it four Quarts of Water; place it in a digesting Furnace, and keep it scalding hot three Days; run it through a Flannel, and press out all the Liquor, which

which evaporate to one Quart, keep it in a Bottle to be used as shall be directed.

Put one Ounce of choice *English* Saffron into a Matrafs, and pour upon it six Ounces of Tartariz'd Spirit of Wine; digest them in a gentle Heat till the Saffron looks Pale.

Into another Matrafs put one Ounce of Cinnamon, of Cloves two Drams, Ginger and Pimento, ~~and~~ one Dram and a half; pour upon them also six Ounces of Tartariz'd Spirit of Wine, and digest two or three Days.

Into a fourth Matrafs put half an Ounce of Camphor moistned with a little Tartariz'd Spirit of Wine, let them digest till the Camphor is dissolv'd.

Press the Tinctures of Saffron and the Spirits through Flannel, which mix with the Dissolution of Opium, and pour all into the Matrafs with the dissolv'd Camphor, let them stand two or three Days in a gentle Heat, and decant for Use. It is at least equal to other Liquid Laudanums.

The Dose from three to forty Drops.

The Drops of Life.

Dissolve four Ounces of the best Opium in Water (as in the former Process.) Then take one Ounce of *English* Saffron, of *Russia* Castor one Ounce and a half, Cochineal and *Virginia* Snake-Root, *ana* half an Ounce, Nutmegs, Zedoary, *ana* two Drams, of Camphor one Dram; powder these Ingredients, and put them into a Matraass; pour upon them of Tincture of Antimony (made with Salt Petre and Antimon. Diaphoret.) one Pound: Let them stand three or four Days in a gentle Heat, shaking the Matraass often, till a good Tincture is produced, which put to one Quart of the Dissolution of Opium; then let all stand in Digestion forty eight Hours, when settled decant.

The Dose from one to forty Drops.

A Pectoral Sudorific Laudanum.

TAKE four Ounces of the Sapo, mention'd in *Starky's Pill*; two Ounces of Extract of Opium, half an Ounce of Saffron; of Ginger two Drams; beat them in a Mortar, and add two Ounces of Balsam Sulph. Anisat. Grind them till they are well united; put them into a Matraass, and pour upon them half a Pound of Sal Volatile Oleosum, and two Pounds of Rectify'd Spirit of Wine. Let them digest forty eight Hours in a gentle Heat, often shaking the Matraass; then add strong destill'd Vinegar four Ounces; shake the Vessel and they will ferment a little; when that's over, close the Matraass again, and let it stand three Days and Nights in a gentle Sand-heat, shaking it as before, when settled decant the clear, (and you may filter the Sediment) and put it into a Bottle.

The Dose from ten to fifty Drops.

X 3

The

The Universal Anodine.

Dissolve four Ounces of the best Opium in a sufficient quantity of Water ; evaporate it to one Pound and a half, to which put one Pound of rectify'd *French* Brandy ; half an Ounce of Saffron, two Drams of Cochineal, and two Ounces of the Tincture of the Volatile Salt of Tartar, (or in its stead two Ounces of the Secret Corrector) of Sal Volatile Oleosum, and the Spirit that was drawn from the Secret Corrector, *ana* three Ounces; digest these four or five Days in a well luted Matraass in a gentle Heat. Then strain it off for Use.

The Dose from five to fifty Drops.

It has not only all the common Operations of other Opiates ; but (as very learned Men assure me) it very much facilitates the Cure of Chronic and Acute Diseases, in some Cases you will find it a little Cathartic.

Observations.

Observations.

THE Extract of Opium may as *Extract of*
well be made with Brandy, or *Opium.*
Proof Spirit, as with Water and Spirit
of Wine, there being Water enough in
either of them to dissolve that we call
the Spiritous Part of Opium; and also
Spirit enough to dissolve the more Ter-
restrious Resinous Part; But be care-
ful in drying it into an Extract that you
do not burn it.

When you put the Extract of Opium *Compound*
to the Tincture of Saffron, Castor, and *Extract of*
Nutmegs; stir them well together till *Opium.*
the Extract and Tinctures be Incor-
porated; and likewise be careful to pre-
vent burning the Extract.

The Yest does often make the Medi- *Laud. Liq.*
cine Muddy, and therefore I substitute *Cydoniat.*
in its place two Ounces of Juniper-Ber-
ries, which renders the Laudanum more
pleasing to the Eye, and takes off its
gripping Quality.

Of late I put in the Juniper-Ber- *Laud. Liq.*
ries with the Saffron, Cinnamon, *Tartari*
Nutmegs, and Mace, and digest them *sat.*

three or four Days; then press them through Flannel, decant that Liquor, and when settled, put to the Tincture one Ounce, or six Drams of the Extract of Opium; Incorporate them well, and Destil off eight Ounces of the Spirit.

*Laud. Liq.
Syden-
ham.*

The Canary-Wine will endure something a stronger Heat of Digestion than Spirit of Wine, or Tincture of Tartar; because there is not Spirit enough in the Wine to Extract the Resinous Part of the Opium. If after three or four Days Digestion of the other Ingredients you press it out, let it settle, pour it off by gentle Inclination, and then put to it one Ounce, or six Drams of the Extract of Opium, you will better perform the Operation.

*Laud. Liq.
cum Spir.
Nit. Dulc.*

If you add two Ounces of Juniper-Berries to the Saffron, the Medicine will be a greater Carminative, and instead of Crude Opium, if you take the Extract, and proceed as in the former Observation, you will the better succeed.

*Starkey's
and Mat.
Pill.*

If you destil the Oil of Turpentine, with which you make the Soap, from
Aromatic

Aromatic Herbs and Seeds, *viz.* Lavender, Mint, Rosemary, Marjoram, Carraway-Seeds, and Juniper-Berries, the Laudanum will be more grateful.

Those Gentlemen who have not Con-
venience to prepare it, may for twenty
Shillings the Pound have it of me.

*The Uni-
versal A-
nodine.*

CHAP. XVI.

Of Essential Oils, and Fixed Salts.

Essential Oils are such as retain the Smell and Taste of the Spices, Gums, Herbs, Flowers, Berries, Seeds, and Woods, from which they are drawn, *viz.* Cinnamon, Cloves, Nutmegs, &c. Benjamin, Balsam of Peru, Ammoniacum, Galbanum, Capivii, Turpentine, &c. Mint, Balm, Marjoram, Wormwood, Pennyroyal, Rosemary, Sage Cammomel, &c. Anni-seeds, Coriander-seeds, Carraway-seeds, Cummin seeds, Sweet-Fennel-seeds, &c. Juniper-Berries, Bay-Berries, &c. Rhodium Saffras, &c.

The Fix'd Salts are Extracted out of the Ashes of the Woods and Plants.

The

The manner of Destilling Essenti-
al Oils.

TAKE what quantity of any Spice, Gum, Berry, Seed, Herb or Wood you please, such as are proper to be bruised or powdered, let them be put into a Copper-Still, and to them put eight or ten times their Weight of common Water; lute the Head to the Still, and its Refrigeratory or Worm, make Fire under it to make it boil, and in a little time the Water and Oil will run into the Receiver, which we call a Spout Receiver, (such as the Figure at the beginning represents) when you apprehend that all the Oil is come off, hold a Spoon under the Nose of the Worm, and if you perceive any Oil comes with the Water into the Spoon, continue the Fire longer, if no Oil appears in the Spoon, let out the Fire, and separate the Water from the Oil.

Observe, First, Few of these Oils are worth Destillation, except in great Quantities, that is to say, several Stills full.

Secondly, That you watch it at its first

first beginning to destil, to prevent its boiling over ; and if you think the little Stream runs too fast through the Worm, , open the Door of the Fire-hole, and that will a little allay its Vigour; if it be not sufficient, interpose a Fire-shovel between the Fire, and the bottom of the Alembec, so as to keep it running in a small Thred, and after the first half Hour of its working, you may be more bold with the Fire.

Thirdly, That you leave Water enough in the Still to secure the Matter contained in it from burning.

Fourthly, That you return the Water you destill'd off upon the fresh Matter in the Still, so long as it is the same Spice, Wood or Herb you drew the first Water from ; for that Water being fill'd with some Oily Particles of the Vegetable from which you drew it, you will have by returning it, more Oil from the said Quantity of Wood, Seeds, or Herbs, the second Destillation than you had the first.

Fifthly, Also observe, That the Oils of Cinnamon, Cloves, and Sassafras being more concentrated and compact
than

than the other, sinks to the bottom of the Water, and all the rest of the Essential Oils swim upon the Surface of Water.

Sixthly, Observe, That the Oils of Anni-seeds, Sweet Fennel-seeds, and Roses, will coagulate; therefore you ought so to order your Matter towards the latter end of your Destillation, to keep the Worm warm to the very Nose of it, by which means the coagulated Oil melts down into the Receiver.

The Fix'd Salts of Plants are made out of their Ashes. For Example.

Take of dry Wormwood, what quantity you please; burn it upon a clean Hearth; rake the Ashes so long as any Fire appears amongst them; put those Ashes into an Unglazed Pan, which set into a calcining Furnace; make Fire about it till the Pan is red hot, where keep it (continually stirring the Ashes) till they are perfectly calcined into whitish grey Ashes, without any blackness: Then put them into a clean Pan, and pour hot Water to them; when that Water is sufficiently Impregnated with the Salt, Filter and Evaporate to dryness; and till the Ashes are left insipid.

CHAP. XVII.

OF TURPENTINE.

IT is of a Balsamic Consistence and Nature, and comes by Incision from several kinds of Trees, viz. the Turpentine Tree in the Island of *Chios*; also from the *Pine-Tree*, the *Larix* and *Firr*.

It is Diuretic, and given in *Gonorrhea's*, Ulcers of the Reins, Bladder and Matrix.

Its Essential, or Ætherial Spiritous Oil, is drawn in Water, in a large Copper Still, as other Essential Vegetable Oils are.

From the *Colophone* which remains in the Copper-Still, may be Destilled by a Retort, its Yellow Oil, and Red Balsam, as followeth.

The

The Yellow Oil, and Balsam of Turpentine.

TAKE of the *Colophone* which remains in the Copper-Still, after the Spiritous Oil is Extracted, what quantity you please; break it into little pieces, and put it into a Retort not above half full; place it in a Sand Furnace; heat it gradually to the second degree of Fire, and then some Oil will drop into the Receiver; augment that Degree a little, and it will cause all the Oil to Destil; then change the Receiver, and urge the Fire to the third Degree, which will cause yellow thick Drops to Destil, with some Fumes; when the Fumes decrease, augment the Fire to the fourth Degree, which will drive over its Red Balsam; when the Receiver begins to cool, and the Fumes disappear, let out the Fire.

By this Method you may Destil the Oils and Acid Spirits of Mastic, Frankincense, *Tacamahacca*, Gum Elemi, Laudanum, and all other Gums of this Nature

CHAP. XVIII.

Of BENJAMIN.

IT is a Resinous Fragrant Gum, which Destils out of a large Tree, growing in *Samaria*, and the Countries adjacent; its greatest Consumption is by the Perfumers: Its Physical Use is to resist the Malignity of Humours. It is also Pectoral and Cephalic.

That which breaks Grey, and is full of white lucid Spots, is counted best.

The Tincture of Benjamin.

Powder four Ounces of select *Benjamin*, put it into a Matraass, and put to it Tartariz'd Spirit of Wine, one Pound; fit the Matraass for Circulation; Lute the Joint, and set it in warm Sand three or four Days, now and then shaking it about; in that time it will acquire a fine Tincture, which Decant, and keep for Use.

Its

Its chief Use is to smoothe the Skin and take away Spots out of the Face. One Dram of it being put into four Ounces of clean Water, turns it white; this is call'd *Virgins Milk*. It is also us'd in Asthma's, and other Diseases of the Lungs.

Its Dose is from twenty, to sixty or seventy Drops.

Flowers of Benjamin.

PUT into a Subliming Pot (of which you have the Figure in the Cuts) two or three Ounces of *Benjamin* in gross Powder; set on its Cover, without Luting, and keep it in the second Degree of Fire in Sand, or immediately over a very small Fire of Charcoal; the Flowers will presently begin to rise into the Cover, which once in an Hour, or Hour and a half, must be taken off, and wip'd out upon a clean Sheet of Paper with a Feather; you ought to have two Covers to one bottom, that you may clap on one as soon as the other is taken off. When you see the Flowers begin to rise yellow,

low, take the melted *Benjamin* out of the Pot, with a Spoon, and put into it more powdered *Benjamin*, as you did at first, and so proceed till you have as many of the Flowers as you desire.

The Oil and Spirit of Benjamin.

TAKE of the black melted *Benjamin*, (which you took out of the Pot after the Sublimation of the Flowers) one Pound; put it into a Retort, which place in a Sand Furnace; cover it well with Sand; Lute on its Receiver, and make Fire of the first Degree for one Hour; then increase to the Second, in which you will have some Oil and Spirit, with some discoloured Flowers; augment the Fire to the third Degree, and at last to the fourth, till no Fumes appear, and you will have a blackish Oil, with an Acid Spirit, and the neck of the Retort will be fill'd with the discoloured Flowers, which you may take out, and put upon clean brown Paper to suck up the Oil. These Flowers (though not so beautiful) are as good for Use as the former; and though both the Oil, Spirit and Flowers have acquir'd (at present) an Empyreumatical
Y Scent,

Scent, in six or eight Months time their Fragrancy will return.

The Oil is a Balsam for Wounds. The Spirit is Diuretic.

Its Dose is from ten to fifty Drops, in any proper Vehicle.

After the same Method you may Destil the Oil, Spirit, and Volatile Salt of the Balsams of *Tolu* and *Peru*, &c.

Observations.

*Tincture
of Benjamin.*

YOU may add to the four Ounces of *Benjamin*, one Ounce of *Stirax*, and also one Dram of the Balsam of *Peru*; they will not only render the Scent more grateful, but also add to the deepness of the Tincture.

*Flowers of
Benjamin*

You must take care that the Fire be not too big, if it be, it forces up some of the Oil with the Flowers, and discolours them.

*Oil of
Benjamin*

If you have the quantity of two or three Ounces of the black Oil, you may put it into a Cucurbit, which is capable of holding a Gallon of Liquor, in which

which you may put two or three Quarts of Water to the Oil, and set it in a Sand Furnace, Luting on its Head and Receiver, and give it gradual Fire till the Water is ready to boil. In this Heat the Spirituous Part of the Oil will Distil with the Water, of a fine Amber Colour, and a Fragrant Scent.

It is a good Internal Medicine, a powerful Diuretic, and a Specific against the Stone and Gravel in the Kidneys and Bladder.

Its Dose is from three to fifteen Drops, in a little refin'd Sugar. The Spirit may (before the Rectification) be separated by Filtration.

CHAP. XIX.

of CAMPHOR.

IT is a Volatile Sulphureous Substance, which drops from a large Tree growing in the Island of Borneo in the East-India's. It is separated from its Dirt by Sublimation, and is brought to us in a Transparent Friable
Y 2 Cake;

Cake; The clear, white, and such as is hard to quench, when set on Fire, is the best. It is accounted a Volatile Alkali, saturated by Nature with Fatness.

It is Anti-Pestilential, and Procreative, (though some have asserted the contrary) good against Fits of the Mother, and a great Smoother and Beautifier of the Skin.

This is a good inward Medicine, and a specific against the Stone and Gravel in the Kidneys.

The Oil, or Dissolution of Camphor.

TAke of clear white Camphor, four Ounces, powder it grossly, and put it into a Matraiss; pour upon it eight Ounces of Spirit of Nitre; set it in a very gentle Heat of Digestion, often shaking it; and in two or three Hours time it will dissolve into a clear Liquor, swimming above the Spirit of Nitre, which you may separate as you do other Oils. Its Use is chiefly External.

If it be dropt into Rose-water, and with it wash'd from its Acrimony, it re-assumes its Body, smoothes and whitens the Skin.

Compound

Compound Oil of Camphor.

TAKE of the aforesaid Oil Four Ounces, of the Rectify'd Oil of Amber, Juniper-Berries, Oranges and Lemons, *ana* three Ounces; put them into a Matraass, and let them stand in Digestion till they are united, which will be in three or four Days: But if you will more strictly Unite them, put into a large glass Body so much Water, as will fill it two Thirds; put to it the Compound Oil; set it in a Sand Furnace, with its Head and Receiver, give it Fire gradually till the Water simmer and bubble; continue the Fire till all the Oil is Destill'd. If any of the Camphor remains coagulated, either in the Head or Receiver, return it, (with all that Destilled) into the Body again, and Destil it as before: Repeat this Operation two or three times, and the Oils and Camphor will become inseparable.

Observations.

*Oil of
Cam. by
Dissolur.*

IF you drop this Oil into Water, it re-assumes its Body, not being Subtilized into an Essential Oil, but only dissolved by so much of the Nitrous Spirit, as it is capable of receiving.

*Compound
Oil of
Cam.*

By repeated Destillations it will perfectly unite with the other Oils, and become Essential.

A

Compleat Course OF Chymistry.

PART III.

Of Animals and Insects.



Shall here, in this Third and Last Part, speak only of those Animals, and such parts of them, as we make use of in Chymistry, as *Salt Armoniac*, *Urine*, *Blood*, *Bones*, *Horns*, *Hoofs*, &c. Also *Serpents*, *Vipers*, *Wood-Lice*, *Pismires*, &c. And First,

CHAP. I.

Elixir Cranii Humani.

PUT six Pounds of Human Skulls (grossly powdered) into a Retort; lute it, and place it in an open Furnace; give a degree of Fire every two Hours, till no Fumes are seen in the Receiver; then let all cool, and take out the Spirit, Oil and Salt; the Salt that adheres to the Receiver wash off with Water, and put it to the other; which return into a clear Retort, and rectifie the Spirit, Oil and Salt in a gentle Sand Heat so often (always in clean Retorts) till they perfectly unite. Put four Ounces of this united Spirit, Oil and Salt, into a Retort (or Cucurbit) with one Pound of rectify'd Spirit of Wine; again rectifie all in a gentle Heat till they are united, (which five or six Cohobations will perform) of this put one Pound into a Matrafs, and two Ounces of the Moss of Human Skulls; let them digest two or three Days, then put it into a Glass, and stop it well.

It

It is a noble Medicine against Mad-
ness, Convulsions, and Hysteric Fits.
It operates by Sweat and Urine; and
the Dose is from five to one hundred
Drops.

Observations.

I Need give you no other Caution than
to lute well the Joints of your
Vessels.

C H A P. II.

Of Salt Armoniac.

SALT Armoniac is brought from
Alexandria in Egypt, Venice, Ant-
werp, &c. It is either *Natural* or *Ar-*
tificial. The *Natural* is found in very
hot Countries, where the Earth has
imbibed the Urine of Animals; but of
this very little is brought to us. The
Artificial is made of Urine ten Pounds,
Sea Salt two Pounds, and the Soot of
Wood one Pound: These are boiled in-
to a Mass, and Sublimed into such Cakes
as comes to us. Puri-

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Wood one Pound. These are boiled in-
to a Mass, and Sublimed into such Cakes
as comes to us.

Puri-

Purification of Salt Armoniac.

Dissolve what quantity you please in warm Water, Filter and Coagulate, or only Evaporate to a Pellicle, and set it to shoot in a cold place ; either of them will render you a very white Salt.

Its *Operation* is Sudorific and Diuretic ; and said to be good in Malignant Fevers ; also in Quartan Agues ; Provokes Womens Terms, resists Putrefaction, and therefore given in the time of the Plague.

Its *Dose* is from twenty Grains to one Dram and half.

Sublimation of Salt Armoniac.

PUT what quantity of Salt Armoniac (in gross Powder) you please into a Retort, or Matrafs, with its Head ; place it in a Sand Furnace ; fit a Receiver to it, and give gradual Fire to the third Degree, in which you may keep it till all is Sublimed, which you will perceive by the Sublimate rising clear

clear above the Sand. Some Sublime it with common Salt, and others with Burnt Allom, but they serve for no other Use than taking up room in the Glass, which must not be quite half full, Salt Armoniac being Sublimed with common Salt, is that which Mr. Lemery calls Flowers of Salt Armoniac,

Its Use the same with the Purify'd,

*Spirit of Salt Armoniac, with Salt
of Tartar.*

TAke of Salt Armoniac, and Salt of Tartar, *ana* one Pound; powder and mix them well, and put them presently into a Cucurbit (or rather into a Retort, because there is but one Joint to close) sprinkle it with twelve Ounces of Phlegm of Wine, or eight Ounces of Spring or Rain-water; place it in Sand, and Luting well its Receiver with Bladder, give it Fire of the first Degree one Hour and an half; increase it to the second, and keep it so for two Hours; go on to the third, and keep it there till you see the Salt begin to dissolve in the Neck of the Retort,

tort, or Head of the Cucurbit : Let all cool, and put the Spirit into a Vial by it self, and the Salt into another by it self.

Its Operation is Sudorific and Diuretic.

It is given in Epilepsies, Palsies, Small-Pox, Malignant Fevers, and Plague.

Its Dose is from ten Drops to one Dram.

Spirit of Salt Armoniac, with Quick Lime.

TAke of Salt Armoniac, in fine Powder, one Pound, of *Calx Vive*, (which has lain in the Air till it is broken into fine Powder,) three Pounds ; mix them well, and put them presently into a Retort, to which put two Pounds of River, Rain, or Spring-water ; shake it, to mix the Powder and Water, and place it in a Sand Furnace, Lute well the Juncture of the Receiver, and give Fire of the first Degree one Hour and a half ; augment it
to

^to the second, where you may keep it till about twelve Ounces of Spirit be Destilled. Then take it off, and keep it in a Vial well stoppt for Use.

You may Lute on the Receiver again, and draw off three or four Ounces more, which will be pretty strong.

Its Operation, Use, and Dose, the same with the other,

It is accounted the better Spirit to smell to, being more Penetrating; but by reason of its heat, it is not thought so good for Internal Use.

The Spirit and Volatile Salt of Armoniac, which Mons. Lemery calls, Sweet Spirit of Salt Armoniac.

Take of Salt Armoniac, and Salt of Tartar, *ana* one Pound, make them into fine Powder, and mix them; put them into a Cucurbit, fit a Helm to it, with a wide Beak, and likewise a Receiver to the Helm; Lute them well, with Bladder dipt in the white of an Egg well beaten with a little Water; place

place them in a Sand Furnace, and give Fire of the first Degree two Hours; the Salt will rise into the Head, and some Spirit drop into the Receiver. Raise the Fire to the second Degree, and keep it so four or five Hours, in which time all the Volatile Salt will be Sublimed: Let all cool, and take off the Head and Receiver, put the Spirit into a Vial well stoppt, and the Salt into another also well stoppt. If you would have the Salt converted into Spirit, it is done by three or four Rectifications.

It is of the same Use with the other Spirits of Salt Armoniac, and may be given in a greater Dose.

The Acid Spirit of Salt Armoniac.

TAKE the *Caput Mortuum* of the former Spirits one Part, and of Fullers Earth three Parts, both beaten into fine Powder, and well mixt; put them into an Earthen Long-Neck, and place it in a Reverberatory; Fit and Lute on the Receiver; make Fire of the first Degree for one Hour, increase it to the second, and keep it there three

three Hours longer, and so to the third and fourth, till the Receiver comes clear without Fumes: Then let all cool, take off the Receiver, and put up the Spirit for Use.

It is of the same Nature and Use as the Spirit of Common Salt, &c.

The Diuretic Salt.

TAKE the grey Salt which remains in the Vessel after Destillation, of either of the Spirits made with Salt Armoniac and Tartar, Dissolve, Filter and Evaporate, either to a Pellicle, and so to shoot into Chrystals, or to a dry bottom.

Its *Operation* is Diuretic and Diaphoretic. It works by Urine very powerfully, from which it takes its Name.

It is given in the Stone and Gravel, also successfully in intermitting Fevers.

Its *Dose* is from ten Grains to one Dram, in any proper Vehicle.

Sal

Sal Volatile Oleosum.

Take of Salt Armoniac, and Salt of Tartar, *ana* half a Pound, powder them apart, and mix them; put the Mixture into a Retort; put also into the Retort half an Ounce of *Marum Syriacum*, and of Tartariz'd Spirit of Wine one Pound and a half, Impregnated with these Essential Oils, *viz.* Cloves half a Dram, Cinnamon one Scruple, Nutmegs two Scruples, of Marjoram, Limons and Oranges, *ana* one Dram; put to them of clean Water two Pounds, and set all in a Sand Furnace; Lute on its Receiver, and give Fire of the first Degree one Hour and a half; increase to the second, in which continue it five or six Hours, or until you have in the Receiver, about a Pint and a half of Spirit and Salt.

You may Aromatize it with Essence of Ambargrease, to your Pleasure.

This Medicine is differently compos'd, as the Operator pleases.

Its Operation is Diaphoretic and Diuretic.

It

It is given in Pains and Diseases of the Head: It is good in Palsies, Lethargies, Scurvy, and Pestilential Fevers.

Its Dose is from ten to sixty Drops.

The hidden Spirit of Salt Armoniac.

TAKE of pure Spring-Water five Pounds, Pot-ashes two Pounds, Salt Armoniac one Pound; put them into an uncut Body, and stop it with a Bolt-Head, firmly Luted; let them stand three or four Days in a gentle Heat of Sand to Digest, shaking them two or three times every Day. Then let the Mixture settle; Filter, and keep the Water for use.

'Tis used to open Obstructions of the Liver and Spleen, Provoke the Terms, Sweeten the Blood, and to give Ease in the Gout.

Its Dose is from forty to sixty, or one hundred Drops,

Z

The

The double Menstruum of Salt
Armoniac.

Reduce Salt Armoniac and *Calx Vi-*
ve, into fine Powder, *q. v.* mix
them in equal Quantities, and let them
run, *per deliquium*, in a moist place.

It is of the same Use with the fore-
going Spirit.

Its Dose is from ten Drops to one
Dram.

Note, That it readily dissolves *Mer-*
*cury Sublimat*e into a clear Water, which
may be of Use to the Curious.

Distillation of Urine.

Take of the Urine of Sound Young
Men, newly made, as much as
you please, put it into an Iron Kettle,
and evaporate it to the Consumption of
one half, in a gentle Heat; put the
Remainder into a Stone Bottle; stop it
well, and set it by to Ferment for a-
bout two Months. Open the Bottle,
and if you find it smell quick and
strong, put it into a large Glafs Retort;

Lute

Lute on a Receiver, and give Fire of the First Degree for an Hour; then increase to the Second, which will raise its Salt and Spirit; continue that Degree till you find the Salt begin to dissolve, and let all cool. Then take off the Receiver, and put all you find there into a Cucurbit; set it in Sand; Lute on its Head and Receiver, and give a gentle Heat at first, and the Salt, and some part of the Phlegm, which we call Spirit, will rise. Continue the Fire till you see the Head well lin'd with Salt, which when you perceive to decrease, let all cool, and put what you find in the Receiver into a Vial well stop'd.

It is Diaphoretic and Diuretic, and given in Intermitting and Malignant Fevers.

Its *Dose* is from five to fifty Drops.

But however, as to the Evaporation, observe to do it by a gentle Heat, lest some of its Volatile Salt, by too great an Agitation, should fly before its Fermentation. The use of this Fermentation is to separate the Phlegm, which would take up too much room to no purpose.

Secondly, If you find not the Urine sufficiently Fermented, which you may know by its quick Seent, stop it again, and let it stand longer.

Thirdly, If you desire the Salt and Spirit apart after the Rectification, then pour off the Spirit into a Vial, and tye a double Paper over the Mouth of the Receiver; set it downwards, and let it drain till the Salt is dry: Then scrape it off from the sides with a crooked Hoopstick, and put it into a Vial well stopt.

If you desire yet a greater Quantity of the Salt, put both it and the Spirit together, into a long Body; Lute on the Head and Receiver, and let it stand in a digesting Heat of Sand, that the Salt may gently sublime.

I have made the Spirit of Urine without Fermentation, by evaporating to to the Consistence of a Syrup, and giving it gradual Fire to the Third and Fourth Degree. In this Operation the Phlegm comes first, and then some Volatile Salt; afterwards more Volatile Salt will appear in white Fumes, with the

the Spirit, and a little stinking Oil, which must be separated from the Salt and Spirit before Rectification. After one Rectification you may separate the Volatile Salt and Spirit, as in the former, but I do not esteem it of equal Goodness with the Fermented Spirit, because all the Salt of Urine is volatilized by the Fermentation. In the *Caput Mortuum*, as some call it, you will find a strong Lixivious Salt; and if the volatilizing fix'd, or Lixivious Salts deserves that Encomium the most celebrated Authors give; the Salt of Fermented Urine must be the best Medicine; and indeed there is a perceptible difference betwixt them; the Fermented Spirit and Salt being more pleasant and penetrating, both in Smell and Taste, than the Unfermented.

Observations.

THIS Operation separates the accidental Dirt from the Salt, and renders it fit for Sublimation. If without this Separation you should sublime it, the foul and dirty Sulphur would rise with it, and render it unfit for some curious Operations.

*Purificat.
Sal. Armo.*

Spirit Sal. Instead of a Pound of Salt of Tartar,
Arm. cum. you may take one Pound and a half of
Sal Tart. Pot-ashes, made clean by Dissolution, and Filtration, and evaporate it to dryness; it is of the same Use with Salt of Tartar.

Spirit Sal. If the Lime be not a little quencht
Arm. cum. before 'tis mixt with the Salt Armoniac,
Cal. Viv. the Spirit will fly with such Violence, that it will be very troublesome to put it into the Vessel, and the most Essential Part will be lost.

Spirit Sal. If you put half a Pound of Tartariz'd
Arm. Dul. Spirit of Wine to the Salts, before Destillation, you will have a greater quantity of Salt, than can be produced without it.

Spir. Acid. This is the Spirit of common Salt
Sal Arm. which was before in the Composition of Salt Armoniac, but kept down by the Salt of Tartar, and therefore it requires as strong a Fire to destil, as that of common Salt.

Sal Diure. If after the Humidity is evaporated, you make too strong a Fire under it, you will burn and discolour it,

If

If you make it with the Spices and Herbs, instead of the Essential Oils it will acquire a little Tincture, which by some is dislik'd, but I think it not the worse.

*Sal Volat.
Oleosum.*

You may dissolve and filter the Salts apart, and then put the Dissolutions together, into a Glass big enough for the Spirit to circulate.

*Spirit Sal.
Ar. Occul.*

Let the Lime be two or three Days expos'd to the Air, before you mix it with the Salt Armoniac, otherways a great part of the Volatile Spirit will evaporate, which ought to be united with the Salt.

*Menstru.
Duplicat.*

C H A P. III.

The Destillation of Harts-Horn.

TAKE that which we call the Velvet-Head, in the Spring time, while it is soft, cut it into little Pieces, and put them into a Cucurbit; lute on its Head and Receiver; place it in *Bal. Mar.* and destil a Water from it.

Spirit Sal. Instead of a Pound of Salt of Tartar,
Arm. cum. you may take one Pound and a half of
Sal Tart. Pot-ashes, made clean by Dissolution
 and Filtration, and evaporate it to dry-
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C H A P. III.

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It is accounted good to help forward the Birth, and to resist Malignant Humours in Fevers.

Its *Dose* is from two, to four or five Ounces.

The Spirit, Volatile Salt, and Oil of Harts-Horn.

TAKE of that which remain'd in the Cucurbit (after the fore-going Destillation) or pieces of solid Harts Horn, as much as you please; put them into an Earthen Retort, or Iron Pot, either of which may be fill'd two Thirds: If it be an Iron Pot, you must fit to it a Copper Head, with its Receiver: if a Retort, only a Receiver: Place them on a naked Fire, which increase gradually, so as to keep some Fumes in the Receiver, but not to force them so violently, as to blow off, or break it; at last give the fourth Degree, in which keep it till no Fumes appear: Then let all cool; take off the Receiver, and put the Oil and Spirit into a Separating Glass; wash out the Salt which remains behind

behind with clean Water, and put it to the Oil and Spirit. Then let it stand twenty four Hours to separate, and draw out the Spirit; then put them into a Cucurbit, or long boll'd Retort, in a gentle Heat of Sand to rectifie; the Salt (and some part of the Liquor, commonly call'd Spirit) will first ascend; the Salt will increase till the Neck of the Retort and Receiver are well charged. When the Salt begins to dissolve, take off the Receiver, and separate the Spirit from the Salt, as before directed in that of Urine. If after Rectification any Oil appears upon the Spirit, separate it by a Glass, and keep the Spirit in a Vial well stoppt.

It is Diaphoretic and Diuretic.

Its Dose is from ten Drops to forty or fifty, in any proper Vehicle.

After the same manner we make the Spirit, Oil, and Salt of *Human Skulls and Bones; Vipers or Serpents, Ivory, Hoofs, Hair, &c.*

The

The Aromatic Spirit of Harts-Horn.

TAKE the Spirit, Oil and Salt of Harts-Horn, after the first Distillation, and rectifie them; put them so rectify'd into a clean long boll'd Retort: to each Pound of which put two Ounces of *Sal Volatile Oleosum* and four Ounces of *Spiritus Nitri Dulcis*; shake them well together, and set them in a very gentle Heat of Sand; lute on a Receiver, and continue the Fire (not exceeding the second Degree) till all be destill'd: in the Receiver you will have a Spirit which has quitted its Empyreum, and receiv'd a penetrating, but very pleasant Scent.

It is a Powerful Diuretic and Diaphoretic; it wonderfully expels Wind from any part of the Body, and by many Experiments found to be endu'd with all the Virtues attributed to *Goddard's Drops*.

Its Dose is from fifty, to sixty or seventy Drops, in any proper Vehicle.

Observations.

Observations.

IF you Destil any Animal Spirit in an Iron Pot, with a Copper-Head, that Head ought to be kept only for such Use.

If you would have that we call Spirit and Salt absolutely free from the Oil; to one pound of the Spirit (after the second Rectification) you may put of Bones, or Horns, calcin'd to whiteness four Ounces, and Destil in a gentle Head of Sand.

If you desire all the Salt in a dry form separated from the Phlegm, put the aforesaid Mixture into a Matraass, or long Body, with a Head and Receiver fitted to them, and in a very gentle Heat of Sand, the Salt will be elevated into the Head and Neck of the Body or Matraass: For the Volatile Salts of Animals are properly their Spirits, and what we call Spirits, is no other than part of the Volatile Salt dissolv'd in the Phlegm, which nevertheless has the same Virtue of the true Spirit, or Volatile Salt, but given in a greater Dose.

If you rectifie the Aromatic Spirit *Spir. C.C.* once more, its pleasant Smell will be *Arom.* augmented.

C H A P. IV.

To Elixirate, or make Essential Animal Volatile Salts.

TAKE half a Pound of Volatile Animal Salt ; put half a Pound of Tartariz'd Spirit of Wine to it, and it will coagulate, and is that which *Helmont* calls his *Offa Alba* ; put that Salt into a Matraass, pouring upon it pure and strong destill'd Vinegar, by little and little at a time, till the Ebullition ceases ; then set it in a gentle Heat of Sand, with its Head and Receiver well Luted ; there will first come a subtile Liquor, dropping from the Nose of the Alembec ; after that will sublime into the Head, a most glorious Salt, white as Snow, in a Figure like large Flowers of Benjamin, of a quick, pleasant, penetrating Scent, and a very agreeable Taste.

In this Operation you must have a watchful Eye ; as soon as you perceive the Chrystals to fall or relent in the Head, draw the Cucurbit out of the Sand, and take off the Head and Receiver ;

ceiver; put the Spirit and Salt apart, into Vials, and carefully stop them: In the Cucurbit you will find a very stinking Phlegm, which may be thrown away.

This is that Animal Salt I unite with the Salt of Tartar, that so readily dissolves in Tartariz'd Spirit of Wine, before-mentioned, with which I extract the Anodine Sulphur of Metals, and of them compose that surprizing Anti-Rheumatic Tincture.

Which rectifies lost and deprav'd Appetites, restoring the Stomach to its true Tone, and preparing the Aliment for further Digestion, cleansing the Blood of all the Corrosive Salts which (in some Measure) occasion those Acute Pains in Rheumatisms, Gouts and Scurvies, &c.

It is a powerful Diuretic, and of excellent Use in the Stone and Gravel, either in the Kidnies or Bladder, by dissolving and washing off that Petrifying Matter which is the cause of both.

By its gentle Diaphoretic and Anodine Quality, it quiets the *Archeus*, and allays

allays the irregular Ferment in the Blood, by which means it becomes an excellent Medicine in all Fevers; and by its carminative and sweetening Quality, gives present Ease in the Cholic, and all Gripings in the Bowels and Stomach.

In its Taste and Operation 'tis most pleasant, and mixes with all Liquors without Ebullition, Coagulation, or Precipitation. So much for the Anti-Rheumatical Tincture.

This Essential Animal Salt is Diaphoretic and Diuretic, Its Dose is from five Grains to one Scruple.

The Dose of the Anti-Rheumatic Tincture is from fifty to one hundred, or one hundred and twenty Drops, in any Liquer which is proper. My common Vehicle is Spring-water.

CHAP.

CHAP. V.
OF VIPERS.

THe Viper is one of the Reptiles, but whether Animal or Insect, I dispute not: The Creature is well known, and has a Skin scaly, and withal so very compact, that it permits little or no Perspiration of Spirits, which is the reason why it is able to live several Months without any other Nourishment than that of Air.

As to the Story of *Pliny* about their Generation, that the Male puts his Head into the Mouth of the Female, which she bites off; that the young Vipers pierce the Womb and Sides of their Dam, and by that means revenge the Death of their Sire. Of their particular Hatred to the Ash-Tree, that they will rather run into the Fire than come near it, and the like, I reject them as Fabulous.

Authors are of different Opinions about the manner of emitting their Portion; some asserting that it proceeds from

from the yellow Juice which often appears upon the Surface of the Wound ; and others from the Rage or Exasperation of the Animal. But my Design being only to give such Antidotes and Medicines as are produc'd from them by Chymical Preparation, I omit all Disputes as foreign to my Purpose.

The Destillation of Vipers.

TAKE what number of Vipers you please, open and cleanse them from all Worms and Excrements, and the Females from their Eggs. Take out their Hearts and Livers ; dry them in the shade, separately from the Bodies, and when they are dry, cut the Bodies into small pieces, and fill a coated Retort three quarters full ; place it in a Reverberatory fit for the Retort ; Lute to it its Receiver, which must be be capacious ; cover the Furnace with its Dome, and make a gentle Fire under it for two Hours, in which time the greatest part of the Phlegm will come off ; then increase the Fire to the second Degree for two Hours more, which will raise its Spirit and Volatile Salt ; increase it still to the Third, which

which will fill the Recipient with Clouds; keep up that Degree till the Clouds lessen in the Receiver; continue the Increase of the Fire still, to the fourth Degree, and keep it there till all be come over, and the Receiver grows cool; then cease the Fire, and you will find the Phlegm, Spirit, Salt and Oil, which must be rectify'd as followeth.

Rectification of the Salt of Vipers.

PUT all that you find in the Receiver into a Long-bodied, un-cut Cucurbit; If more Salt adheres to the Receiver than the Liquid which Destill'd from the Vipers will dissolve, put in a little Water, and rinse all the Salt out into the Body; place it in *Baño*, or a gentle Heat of Sand or Ashes; Lute on the Head with a Bladder daub'd with stiff Starch, and dipt in the white of an Egg. You may also Lute on a small Receiver to the Beak of the Alembic, and the Salt will sublime into the Head, or upper part of the Body, distinct from the Phlegm, and grosser part of the Oil, which must be kept in a clean Vial, carefully and exactly stop'd for Use.

To this Salt many Virtues are attributed ; as that it gives Relief even in those Diseases which are most refractory and difficult to cure ; as Apoplexies, Lethargies, Convulsions, Palsies, and all other Diseases believed to have their Source in the Brain : Likewise in Distempers of the Breast ; as difficulty of Breathing, Palpitation of the Heart, Pleurifies, Soundings, &c. It dissipates all inward Imposthumes, and dislodgeth secret and unknown Pains, which have their Origine in the Spirits. It helps Digestion, and purifies the whole Mass of Blood, resolves and prevents Coagulations in all parts of the Body. 'Tis an excellent Remedy against all intermitting Fevers, particularly Quartanes. It works powerfully in the Distempers of the Matrix, and is an Enemy to all the Vices of the Skin, even to the Leprosy it self. But above all, a most certain Specific against the Bitings of all Venomous Creatures. It is also a great Antidote against the Plague, and all Contagious and Epidemical Diseases, as the Measles, Small-Pox, &c.

Its

Its *Dose* is from ten Grains to two Scruples, in any proper Vehicle.

This Excellent Salt is also another Ingredient in the Anti-Rheumatic Tincture.

A Sudorific Water of Vipers.

Take what number of Living Vipers you please ; put them into a strong Earthen Body, tye a Hair-Cloth over its Mouth (such as coarse Hair-Sives are made of) fit and fasten a Head well to it, then place it in *Balneo*, which gradually make to boil ; this will elevate a Water, which you will see drop into the Receiver ; when the Drops cease to fall, let it cool, and take out the Water.

Its *Operation* is Diaphoretic, and 'tis successfully exhibited in many Cases where the Salt is proper.

Its *Dose* is from twenty, to seventy or eighty Drops, in any proper Vehicle.

The Effence of Vipers.

TAke of dry'd Vipers what number you please, cut them into small pieces, and put them into a Cucurbit, place it conveniently, and pour into it (by a little at a time) so much Spirit of Nitre as will dissolve them; (commonly twelve Ounces of Spirit of Nitre will dissolve four Ounces of Vipers.) When all the Spirit is put upon them, let them stand five or six Hours, and there will be a black Scum upon the Surface of the Dissolution, which must be taken off with a Glass Spoon, or in defect of that, a clean Tobacco-Pipe. You will likewise find white Fœces in the bottom, which must also be separated from the clear Dissolution; pour the clear Liquor into a Retort, and by an Ounce or two at a time, put to it three times its weight of Tartariz'd Spirit of Wine, shaking them often about, as you mix them; place the Retort in a heat of Ashes, and with a gentle Fire destil off the Spirit of Wine, which will be an excellent dulcify'd Spirit of Nitre: To the black Matter remaining in the bottom of the Retort, put the same quantity of new Spirit of Wine

Wine Tartariz'd, and destil it off, as you did the other; Put on again the same quantity as before, and destil in the same manner; and repeat this so often with new Spirit of Wine, till it has neither any Nitrous Smell, nor Acid Taste; keep that which remains in the Retort, to unite with the Volatile Salt, and rectify'd Oil of Vipers, as followeth.

The Rectification of the Oil of Vipers.

PUT the Oil and Phlegm from which the Salt of Vipers was sublimed, into a Cucurbit; let the Cucurbit be capable of holding two Gallons; pour to them one Gallon of clean Water, set it in a Sand Furnace; fit to it its Head and Receiver; give it a gradual Fire, till the Matter within the Body bubble; continue the Fire so, till holding a Spoon under the Beak of the Head, you perceive very little or no Oil swim upon the Water, which drops into the Spoon.

Then let all cool, and you will have Water, with the Ætherial Oil of Vipers, in the Receiver.

The Compound Tincture of Vipers.

TAke one Pound of Flowers of Sulphur, four Ounces of Crude Antimony ; grind them to a fine Powder, put it into an Earthen Dish, and saturate it with four Ounces of Oil of Sulphur *per Campanam* (or with Oil of Vitriol) put it into a Retort, and pour gradually one Pound of sweet Spirit of Nitre upon it ; place the Retort in a Sand Furnace, and draw off the Spirit; into one Pound of this Spirit put two Ounces of dried Vipers (cut into small pieces) let them digest forty eight Hours in a Matraass ; when cool, strain it through Hair-Cloth. Return the Menstruum into a Matraass, adding of Cochineal, Saffron, and Virginia-Snake-Root, *ana* two Drams ; let them digest forty eight Hours, then decant a clear Tincture.

It is an excellent Diaphoretic. In the Year 1665, I have known it often given with Success in the Plague, as well as in Malignant Fevers.

The Dose from five to fifty Drops.

The

The Union of the Volatile Salt, Ætherial Oil, and the most Subtile Particles of the Viper into an Essence.

PUT to four Ounces of the Dissolv'd Body of the Vipers left in the Retort, one Ounce of *Tinctura Regalis*, (before-mentioned in the Chapter of Antimony) by a Dram at a time; then to two Ounces of the Salt, and half an Ounce of the Ætherial Oil, put one Pound of the same *Tinctura Regalis*; put them into a Matraass, which make a Circulatory, and let them stand ten Days in the Sun, (or an equivalent Heat,) shaking them every Day: when you see the Tincture has Imbib'd all the Salt and Oil, take it out, and put it to the Dissolution of the Vipers aforesaid; and when by a strong agitation you have loosned the Dissolution from the Retort, put it all into a Matraass, and let it Circulate in a very gentle Heat ten Days, shaking it every Day; in this time all the several Substances will be united into an Essence, which pour off from the Fæces into a clean Vial, and keep carefully stoppt for Use.

This Essence is endued with all the Virtues of the Salt of Vipers, and if any Animal Medicine exceeds the Salt, it is this.

Its Dose is from twenty to one hundred Drops, in any appropriated Liquor.

Observations.

*Destillat.
of Vipers.*

SOME take only the Bodies, pulling off the Skin, and cutting off the Heads and Tails, which they put away; also they put away their Heart and Liver; but all these yield as much Salt, proportionable to their weight, as the Bodies do: And you may as well perform this Operation in a good Sand Furnace, and uncoated Retort, as you can in a Reverberatory.

*Rectificat.
of the Salt.*

If you desire it more nicely separated from all the Oily Particles which it carried with it in the first Rectification. Mix three parts of clean, and very dry Chalk, in fine Powder, with one part of Rectify'd Salt of Vipers; put it into a Matrafs, or uncut Cucurbit, with
its

its Head and Receiver well Luted, and with a gentle Fire sublime the Salt, and it will leave all its Oily Particles absorb'd in the Chalk.

The Hair-Cloth is fastned over the Mouth of the Cucurbit, to keep the Vipers from jumping up into the Head, when they begin to be heated, by which means they may possibly break the Head, and get out; whose Biting then would be extreamly pernicious, by reason of their irritation by the Heat of the Fire.

*Sudorific
Waters of
Vipers.*

When you put the Spirit of Nitre to the Vipers, place the Vessel where the Fumes may ascend without offending you. Also be careful not to put above an Ounce or two at once of the Spirit of Wine to that of Nitre, wherein the Vipers are dissolved, lest the Ebullition shou'd be so strong, as to fly out of the Vessel with violence. The repeated Destillations with new Tartariz'd Spirit of Wine, are to elevate as much of the Spirit of Nitre as is possible, and to hinder its fixing the Salt of Vipers.

*Essence of
Vipers.*

One Gallon of Water will be sufficient to rectifie four Ounces of the black

*Redificari
of the Oil.*

black Oil in, and generally by that time you have Destill'd two Quarts of Water, you will have all the Ætherial Oil come over.

*Union of
the Oil,
Salts, &c.*

The Ounce of *Tinctura Regalis* is put to the dissolv'd Vipers, to satiate (in part) that Acidity still remaining in them, which otherwise might too much fix the Salt of Vipers, and reduce it to the Nature of common Salt Armoniac, which being again mix'd with fix'd Alkalies, may be Sublimed into an Animal Urinous Salt, as it was before.

You may likewise Dulcifie the Dissolution, by putting to it (a little at a time) so much pure fix'd Nitre as will satiate its Acidity: then let it stand in a cold place, and it will shoot into a combustible Salt Petre again; and the Dissolution will be thereby freed from the Corrosive Spirit of Nitre, which would have changed the Volatile Salt into that which some call the Secret Salt Armoniac.

N. B. That whatever Animal, Vegetable, or Mineral, is dissolved in the Spirit of Nitre, it will be made to Precipitate

cipitate with the fix'd Salt; and on the contrary, whatever is dissolv'd in the *Ole. Nitri, per deliquium*, or by its fix'd Salt, will be separated by the Spirit; and this (if carefully elaborated) may be done without prejudice to the Matter dissolved, and to the augmentation of their Virtues, by digesting and ripening their undigested Crudities.

C H A P. VI.

Of H O N E Y.

IT is the Juice of Heavenly Dew, which falls upon Flowers and Herbs, and is gathered by those Industrious Insects the Bees, and in them further digested. The best is of a bright Yellow, having a pleasant Scent, and an equal Consistence in every part.

It Nourisheth, Cleanses and Opens. It is Pectoral and Diuretic, cures Coughs, and resists Putrefaction.

Tincture

Tincture of Honey.

TAKE one Pound of pure Virgin Honey, despume it in a clean Earthen Pan, and put to it three Ounces of pure Salt of Tartar (or any other fix'd Salt) finely pulveriz'd; stir them well together, and an Ebullition will arise; stay till it is over, and take off the Scum, and put the Mixture into a Cucurbit uncut, and pour upon it one Pound and half of Tartariz'd Spirit of Wine; close the Mouth, and set it in the Heat of Digestion forty eight Hours, agitate the Matter three or four times a Day, and in that time the Spirit of Wine will have charged it self with the purest part of the Honey. Decant it from the Faces into a new Cucurbit; Lute on the Head and Receiver, and draw off one half of the Spirit of Wine in a gentle Heat. That which remains will be a sweet thick Tincture, being an excellent Pectoral Medicine.

Its *Dose* is from forty Drops to two Drams.

Spirit

Spirit of Honey.

MIX one Pound of Honey with three Pounds of clean Sand, and put it into a Retort in a Sand Furnace; make a Fire of the first Degree for two Hours; increase it to the second for two Hours more, and so go on to the third, where let it remain till no more Fumes or Drops will fall. You will find an Empyreumatical Spirit and Oil; put them both into a Cucurbit, and with a Fire of the First Degree draw off the insipid Water, and by the second you will raise the Spirit.

It is an Acid Spirit which dissolves Pearl and Coral; and some use it to procure, or make Hair to grow.

Sweet Honey Water.

TAKE of good *French* Brandy one Gallon, of the best Virgin Honey, and Coriander-seeds, *ana* one Pound, Cloves one Ounce and an half, Nutmegs one Ounce, Benjamin and Styrax, *ana* one Ounce, Benilloes, number four, the yellow Rind of three large Lemons.
Bruise

Bruise the Cloves, Nutmegs, Coriander-seeds and Benjamin, cut the Beniloes in small Pieces ; put all into a Cucurbit, and pour the Brandy to them, and after they have digested forty eight Hours, Destil off the Spirit in *Balneo Maria*.

To one Gallon of this Water add of Damask-Rose, and Orange-flower-water, *ana* one Pound and an half, of *China* Musk, and Ambar-grease, *ana* five Grains. First grind well the Musk and Ambar-grease with some of the Water, and afterwards put all together into a large Matraass ; shake them well, and let them circulate three Days and Nights in a gentle Heat ; then let all cool, filter and keep the Water in a Vial well stoppt for Use.

This Water I often made for King *James* II. It is an Anti-paralitic, smoothes the the Skin, and gives one of the most agreeable Scents that can be smelt. Forty or fifty Drops put into a Pint of clean Water, are enough to wash the Hands or Face with ; and the same Proportion to Punch, or any Cordial-water, gives a most pleasant Flavour.

Oil of Wax, with its Spirit and Butter.

PUT three Pounds of clean warm Sand into a Pan, slice into it one Pound of Bees-wax, in small Pieces, stir it about that the Wax may melt, and mix equally with the Sand; when 'tis quite cold, put it into a Retort, and place it in a Sand Furnace; make Fire of the first Degree one Hour; increase it to the second, and keep it so two Hours, and after in the third for three Hours, in which time the Oil and Spirit, with some of the Butter, will be in the Receiver, and the rest of the Butter will stick in the Neck of the Retort; you may separate and keep them apart.

Their Operation is Diuretic.

The *Dose* of the Spirit is from ten Drops to forty or fifty, in any appropriate Liquor: The Dose of the Oil is from five to twenty five Drops mix'd with Sugar, to make it the better incorporate with Liquor. The Butter is the same. The Butter and Oil are also outwardly

wardly applied, and are good to dissolve Tumours.

Observations.

*Tincture
of Honey.*

LET the Earthen Vessel you mix the Honey and Salt of Tartar in, be Capacious enough to contain six or eight times the quantity you put into it, otherwise the Ebullition will be so strong, that it will cause it to boil over.

*Spirit of
Honey.*

The Sand is mix'd with the Honey, to keep it from boiling over, notwithstanding which it will swell and bubble, and therefore you ought not to fill the Retort above half full. In its Rectification, fit a Receiver, without Luting, and as soon as you taste any Acidity, change the Receiver, Lute it, and draw off the Spirit in an Heat not exceeding the third Degree; and if you add a twelfth or sixteenth part of Spirit of Nitre Dulcified, it will abate its unpleasant Scent.

*Sweet Ho-
ney Water.*

The Honey more powerfully opens the Aromatics, which otherwise would afford but very little Odour.

You

You may mix the Wax with three times its weight of quick Lime, especially if you rather desire the Oil than the Butter; for the igneous Particles of the Lime mixing with it, rarifies it more than any other Bole; and if you desire to convert all the Butter into Oil; one or two Rectifications from quick Lime will produce it, and make it more penetrating than *Ol. Cera*, made any other way.

CHAP. VII.

Of Sows, or Hog-Lice.

THEY breed in Cellars and moist places, under Stones, old Casks, and Logs of Wood; being touch'd, they gather themselves up like round Beads; they are said to Digest, Externuate, Open, Cleanse, and Resolve Tartarous Mucilage: are good in the Jaundice, Cholic, Stone and Difficulty of Urine.

*The Spirit, Volatile Salt, and Oil of
Hog-Lice.*

PUT what quantity of *Millepedes* you please into a long bodied Retort, so that it be not above half full; place it in a Sand-Furnace; lute on its Receiver, and give it the first Degree of Fire till the Retort is thoroughly hot; then increase the Fire to the second, in which keep it two or three Hours (according to the quantity of Lice) and some Liquor will drop into the Receiver, and the Volatile Salt will begin to rise; increase it to the third and fourth Degree, then cease, and take off the Receiver, when it is cool, where you will have Spirit, Oil, and Salt, which you may separate and rectifie apart; or put all together into a long Neck'd Matrass, luting on its Head and Receiver, and separate the Salt by Sublimation, as you do that of Vipers.

Its *Operation* is Diaphoretic and Diuretic.

Its *Dose* from ten, to fifty or sixty Drops.

Observe,

Observe, You may make the Tincture and Essence of them in the same manner as you are directed, in the following Chapter of *Ants*.

CHAP. VIII.

Of ANTS.

THese are wise and Industrious Insects, making Provision in the Summer, for their Support in Winter, observing a regular Discipline in their Labour, Regimenting their Numbers, and as it were constituting Officers over those that are appointed to work, to see its Performance.

I have with Delight and Wonder observed them to issue out of their Hives in Order, and when loaded with Provision, returning in a continual Line, without being jostled by those which have disburthened themselves, and are marching out for more Stores. This Labour they perform in the Full of the Moon, and rest in the New.

B b 2

They

They are Black, or Reddish; in the Winter they breed Eggs and Worms, which in the Summer become Ants; those which breed under Trees, and smell sowre, are accounted best: They are said to provoke Venery, and create Courage: Some Authors use their Eggs to restore Hearing.

The Spirit, Oil, and Volatile Salt of Ants.

TAKE what quantity of Ants you please, put them into a long-bodied Retort, or an uncut Cucurbit; let not the Vessel be above half fill'd with the Insects; fit a Recipient, and lute the Joint well; give gradual Fire, as you did to the *Millepides*, and in all things proceed as in the Destillation and Rectification of them.

The Tincture of Ants.

TAKE what quantity of Ants you please, put them into an un-cut Body, and put upon them so much Oil

of Nitre, *per deliquium*, as will cover them ; let them stand in a gentle Heat of Digestion five or six Days, in which time they will be dissolved ; towards the end of which you may increase the Fire three or four Hours to make them boil ; then let them cool, and pour upon them three times their weight of Spirit of Wine ; stop the Body with a small Matraass, and lute the Joint well ; let it stand in a good digesting Heat till the Spirit is well tinged ; let that cool and pour it off, and put on more Tartariz'd Spirit of Wine, and set it again in Digestion, till it has also acquir'd a Tincture, which will be in two or three Days time ; decant that Tincture to the first, and put both into a Cucurbit, lute on its Head and Receiver, and in *Balneo Maria* draw off two Thirds of the Spirit of Wine ; that which remains in the Cucurbit let cool and settle, and by gentle Inclination pour the Tincture into a clean dry Vial for Use.

In Virtue it exceeds that which is attributed to the Creature in every respect.

Its Dose is from ten, to sixty or seventy Drops, in a Glass of Canary, or Wine and Water.

B b 3

The

The Effence of Ants.

Dissolve Ants in Spirit of Nitre, in the same manner as you did the Vipers, skimming off the Froth and decanting it from the Faces; to the clear Dissolution of four Ounces of Ants, put of their rectify'd Oil four Drams, which drop in by half a Dram at a time; then put also by little at a time, two Ounces of their Salt; when all is mix'd and the Ebullition ceased, shake them well, and set them in a very gentle Heat of Digestion forty eight Hours, in a Circulatory Vessel; then, by gentle Inclination pour off the Dissolution from the Faces into a clean Cucurbit; to which also put so much fix'd Nitre in Powder, by a little at a time, till no Effervescence appears; let them stand cool and quiet, and in a few Hours they will be shot into a renovated Salt Petre: If any Liquor remains with the Chrystals, pour it off into a clean Cucurbit, with its Head and Receiver, and in a very gentle Warmth dry it; likewise dry gently that Precipitate, which the Spirit of Nitre let fall, when it embrac'd its own first Salt.

Then

Then put the renovated Nitre, Precipitate, and the Residence of the Liquor which was evaporated, all together, grind them in a Glass or Marble Mortar, put them into a Matraass, pour upon them one Pound of Tartariz'd Spirit of Wine, invert a small Matraass, and lute the Joint well, and let it stand in Digestion three or four Days, shaking it every Day once or twice, then let it cool and settle, and decant off the tinged Spirit, and to the Matter remaining, put another Pound of Tartariz'd Spirit of Wine; let it stand as before, to extract more Tincture, and so proceed till it gives no Colour to the Spirit of Wine. Then put all the ting'd Spirits into a Cucurbit; lute on well its Head and Receiver, and in a gentle Heat of *Balneum* draw off three fourths of the Spirit, which keep well stopt, for any such like Operation hereafter.

That which remains in the Cucurbit let cool, and pour it into a clean Bottle, which keep well stopt for Use.

This is the most Excellent Medicine which is prepared of this Industrious Insect.

Its Dose from ten, to seventy or eighty Drops.

Observations.

*Rectificat.
of the Oil.
and Salt.*

AFTER you have separated the Salt by Sublimation, put the Oil and Phlegm remaining in the Matraass, into a Retort, with a long Body; rinse out as much as you can of the Oil which adheres to it, till it is above half fill'd with Water; place it in a Sand Furnace, and give it gradual Fire till the Water and Oil bubble a little; but take care it boil not over, for then your Labour will be lost.

If you put a quarter part of *Spir. Nitri Dulcis*, to that of the Oil in its Rectification, it will render the Oil more pleasant, and no way hurt its Virtue.

*The Tinct.
of Ants,*

If the Oil of Nitre be very strong, the Spirit of Wine will not mix with it, but will swim upon it, as Oil doth upon Water, and will only prey upon the Animal Sulphur opened by the Oil; remember to shake them often while they stand in Digestion.

Place

Place the Vessel in which you make *The Es-*
the Dissolution in such a place where *sence of*
the obnoxious Fumes may evaporate *Ants.*
without Offence, and continue it there,
after you have decanted it from its Fa-
ces, till you have charged it with the
Volatile Salt and Oil of the Insects, and
also with its own fix'd Salt; then set
it in Digestion, as the Process directs.

C H A P. IX.

Of Spanish Flies.

THEY are a sort of Beetle, of a
golden greenish Lustre, produced
from a Worm like a Caterpillar; they
breed in Wheat, the Leaves of Ash and
Poplar. The best are found amongst
Wheat, and in Meadows: They abound
in *Provence* and *Languedoc*, from
whence we are chiefly supplied.

They are Hot and very Corrosive,
seldom us'd inwardly, without good
Correction.

The

The Effence of Spanish Flies.

BRuise four Ounces of Cantharides, put them into a Cucurbit, and pour upon them, by little at a time, twelve Ounces of Spirit of Nitro, and let them stand in Digestion twelve Hours; then with a Glass Spoon, or Spatula, take off a black Scum from the Surface of the Spirit, which cast away; pour gradually upon them one Pound of Tartariz'd Spirit of Wine, mix them well by shaking, and place them in a Sand Furnace; Lute on a Head and Receiver; kindle the Fire, which gradually increase to the second Degree, and in that Heat draw off a Pound and half of Spirit, which keep by you for farther Use.

To that which remains in the Cucurbit, put (by little at a time) so much Salt Petre as will satiate its Acidity, which you will know by the ceasing of its Ebullition. Then put that Mixture into a Glass or Marble Mortar; put to it one Ounce of Refin'd Camphor, and grind them till they are well Incorporated, and return them again into the Cucurbit; rinse out the Mortar with
some

some of the Spirit of Wine which you drew off from them, which pour into the Body, with the remaining part of the Spirit of Wine; shake them well, and set them in a Heat of Digestion; make the Cucurbit a Circulatory; lute the Joint close, and let them stand in that Heat eight or ten Days, shaking them well about every Day; then let it cool and stand to settle; pour off the Tincture into a clean Cucurbit, and in a very gentle Heat draw off one half, or more, of the Spirit, which again put upon the Mixture, to extract more Tincture; and when that Spirit is again tinged, draw off two Thirds, which put the third time to extract more Tincture, and destil as before, still putting the Tincture remaining after Destillation of the Spirit, to the first Tincture.

Then take one Dram of Ambar-grease, half a Dram of Musk, and two Drams of white Sugar-Candy; grind them very well together, with a little of the Spirit last drawn off; pour them into a Matraass, and to them put four Ounces of the aforesaid Spirit, close the Matraass well, and set it to digest four or five Days; then put it to the Tincture

ture of Cantharides, (also in a Matrafs) and let them circulate together four or five Days more; then pour it into a clean dry Bottle, which keep well stop't for Use.

It is accounted a great Cordial, and really is endu'd with that Quality which is attributed to the Essence of Satirion Root.

Its Dose is from ten to an hundred Drops, in a Glas of Canary-wine, or any other Vehicle which better pleases the Patient.

Observations.

THat you make the Dissolution in a place where the Fumes may freely ascend without Annoyance to the Operator; the same Care must be taken in mixing the Spirit of Wine with that of Nitre; and also the same Caution ought to be us'd in putting the fix'd Salt of Nitre to its Spirit.

The Camphor absorbs the Corrosive Quality of the Fly; and the fix'd Salt of

of Nitre satiates that of the Spirit, so that there is no need to fear any ill Consequence from either.

The Dissolution subtilizes the Fly, and corrects all its Poisonous Quality.

The Discharge of the dissolv'd Particles, by the fix'd Salt, renders it fit to yield its Essential Being to the Spirit of Wine.

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PART IV.

By way of

APPENDIX.

Of Transmutation of Metals.



THE Doctrine of Transmutation of Metals has been positively asserted by many Authors, both Ancient and Modern; by Men of great Learning and Experience, of solid Virtue and Piety; of which (amongst others) the late Honourable Mr. Boyle is, I think, a compleat Instance.

I know indeed that this Doctrine meets with very little Acceptance amongst the Learned of this Age; neither shall I pretend to be an Advocate for it, tho' the expensive and tedious Experiments I have made, abundantly convince

convince me that Metals may be very much meliorated, if not entirely transmuted.

The following Experiments, which I have chosen out of many others, I faithfully deliver to you; hoping that I have so behav'd my self, that my Veracity will not now be question'd; and that I shall not, upon the Brink of Fourscore, be accus'd of Vanity.

The *Ætiology* of any thing in these or the former Processes cannot be expected from me, who want the great Blessings of Academical Education, and have no more Philosophy than (I may truly say) I have fetch'd out of the Fire. Therefore if you would have the various Phenomena accounted for, I must refer you to a Dr. *Friend*, or some other Learned Physician well skill'd in Speculative and Practical Chymistry.

I affect no unintelligible Words, of Mystical Hieroglyphics to delude Men of their Money and Senses too. I honestly relate only Matter of Fact, which may caution you against those circumforaneous Pretenders, the Adepts, who have Prejudiced the World by their Cheats, and notwithstanding the fair Warning *Erasmus* long since gave us,
continue

continue to impose upon some great and wise Men ; witness the Duke of *Florence* formerly, and another Potentate (mention'd in our Gazette) this last Year.

EXPERIMENT I.

THE Fifth of August, A. D. 1661.
Mr. T. T. join'd with me in the making the Mercurial Water following.

We had a cast Iron-Body three Foot long, with a Perforation within half a Foot of the top ; we made an agreeable Furnace, and placed the Body in it, to which we luted a large Glafs-Head, with a very wide Beak, to which also we luted seven Aludels : When the bottom of the Body was of a white Heat, we put in at the Perforation two or three Drops of Mercury, and immediately stopt it close. This little quantity of Mercury made a great Noise, and rose in white Fumes, which fill'd the Head, all the Aludels and the Receiver. When these Fumes were condens'd, we put in the like quantity as before, and so continued, till in sixteen

C c.

Hours

Hours time we had put in one Pound of Mercury. When all was cold, we took off the Receiver and Aludels, in each we found a little Water, and in the first and second Aludel some Grains of Crude Mercury; we carefully put all the Water together, which seem'd to be about one Pint, and yet the weight was but thirteen Ounces and six Drams.

We pleas'd our selves wonderfully with our suppos'd Treasure, which we concluded could be no less than *the Universal Menstruum*; but after many Trials we found it of no more Virtue than *common Water*. We spent above half of it upon Leaf Gold, Gold calcin'd with Mercury, and upon a Lunar Calx, &c. but the more Experiments we made, the more we were convinc'd that our mighty Expectations were vainly founded; however we divided the remaining Water; and I lost my part when the Fire of London, A. D. 1666, forced me to remove.

The same Gentleman and I tried many Experiments with Air attracted by several Magnets; with May-Dew, and other insipid Menstruums, &c. and we never

never found them more useful than de-
still'd Rain Water.

EXPERIMENT II.

THE Fourteenth of June, A. D. 1677,
I purify'd Regulus Martis to a
perfect Star, of which I melted four
Ounces, with half a Pound of fine Sil-
ver; I beat it when it was cold into
a fine Powder, and then with twenty
four Ounces of Mercury, reviv'd from
Cinnabar, I ground it in an Iron Mor-
tar till they were truly amalgamated.

The Sixteenth, This whole Day was
spent in grinding the Amalgama with
warm Water, till the Water came off
clear.

The Seventeenth, I put the Amalga-
ma into a Retort, which I set in Sand,
and gave it Fire gradually, but the last
four Hours I kept it in the extream
Degree.

The Eighteenth, I again melted the
Luna with four Ounces of the stellated
Regulus; then beat it into fine Pow-
der, and by grinding with it the destill'd

Mercury, I made an Amalgama as before.

The Nineteenth I wash'd and ground the Amalgama in warm Water.

The Twenty First, it was destill'd.

These Operations I repeated ten times, always melting four Ounces of fresh Regulus with my Luna.

The Eighth of July, I weighed my Mercury, and found it twenty Ounces and six Drams; I boil'd it in destill'd Vinegar, and strain'd it thro' fine clean Cloths till it was dazling bright.

The Ninth, I put two Ounces of this Mercury, and six Drams of perfect fine Gold into a little uncut Body; I set it into my Athanor, where it continued six Days in a gentle Heat, in which time the Mercury had so penetrated the Gold, that in less than six Hours time I ground them into an Amalgama, which I wash'd till it was very bright, then I put it upon a Sheet of fine white Paper, and set it in a gentle Heat of my Athanor to dry.

The

The Nineteenth, I put it into a strong Chrystal Egg, which I seal'd Hermetically, and placed it in my Athanor, gradually giving Fire for fifteen Weeks; then the bottom of the Pan in which it stood was red hot; it endured this Heat four Days, and then burst into ten thousand Pieces, so dispers'd, that I never could find one Grain of it.

N. B. After it had stood three Weeks in the first Degree of Heat, it turn'd a little Black. Six or eight Days after it divided (as it were) into little Islands: Eight or ten Days after that it began to vegetate, and grew daily from little Shrubs to Trees, first with Budds, then Leaves; and lastly with little round Knobs like Fruit, which I beheld with much Pleasure, tho' I paid dear enough for it.

EXPERIMENT III.

THE Tenth of October, A. D. 1677, I bought of Mr. Willmore the Refiner, five Pounds of Mercury (which he had destill'd from various Metals) I destill'd it also from Scoria of Mars and Sulphur three times; and twice per se;

C c 3

after

after that seven times from Regulus of Mars and Venus in the Proportions following,

The Twentieth, I took six Ounces of pure Regulus of Mars and Venus, of fine Silver twelve Ounces, of the Mercury three Pounds; r ground the Regulus into a fine Powder.

The Twenty First, by grinding I made an Amalgama of the Regulus and Mercury, and wash'd it pure with clean warm Water.

The Twenty Second, I destill'd it.

The Twenty Fourth, I melted the Silver with six Ounces of new Regulus, and reduc'd it to Powder.

The Twenty Fifth was spent in grinding them into an Amalgama, and washing it as before.

The Taenty Seventh, I destill'd the Mercury, and I afterwards repeated all these Operations seven times.

The Fourteenth of November, I destill'd

still'd the Mercury from Scoria of Mars,

The Fifteenth, I squeezed it through Leather, boil'd it in destill'd Vinegar, and often strain'd it through fine Cloths, and put it into a Bottle. It then weighed two Pounds, seven Ounces and a half; it having wasted in the several Operations eight Ounces and a half.

The Eighteenth, I put six Ounces of this Mercury, and two Ounces of fine Gold into a little uncut Body, and let it stand ten Days in a gentle Heat of my Athanor.

The Twenty Eighth, By grinding I made an Amalgama of it, which I boil'd in destill'd Vinegar, and found the Vinegar received a blackish Tincture; then I wash'd it in warm Water, and dried it first with clean Cloths, and afterwards upon the top of my Athanor.

The Twenty Ninth, I put it into two strong Chrystal Eggs, which I seal'd Hermetically, and placed in my Athanor.

The Twenty Third of November, I dissolv'd two Pounds of Mercury in A-

qua Fortis, (made of Allum and Nitre) which I precipitated with Filings of Lead. Some will affirm this to be the Mercury of Saturn, but I must crave leave to dissent from them.

The Twenty Fifth, I destill'd this Mercury from clean Filings of Iron.

The same Day I melted four Ounces of Regulus Veneris, with eight Ounces of fine Silver; brought it into Powder, of which by grinding with twenty four Ounces of the Mercury I made an Amalgama, which I ground and wash'd, as in the former Preparations; and I repeated all the Operations last mention'd seven times.

The First of December, with two Ounces of pure Gold, one Ounce and a half of fine Silver, and with ten Ounces of the Saturnine Mercury, I made an Amalgama; and this I clean'd by grinding and washing as I did the other Solar Amalgama's; then I boil'd it in destill'd Vinegar, and wash'd it with warm Water, and dried it first with clean Linen, then between white Paper on the top of my Athanor.

The

The Sixth, I divided it, and put it into two Chrystal Eggs, which I seal'd Hermetically.

The same Day, having enough of my first Sophic Mercury by me, I made another Amalgama with two Ounces of pure Gold, and six Ounces of that Mercury; by grinding, washing, boiling, and drying. I prepar'd it as I had done the other, and also hermetically seal'd it in two Eggs.

The Eleventh, I placed my Six Eggs in my Athanor, and gave them a gentle Heat one and twenty Days; then the last Amalgama with the first Sophic Mercury (*i. e.* Mercury in the second Experiment) and Gold turn'd blackish; the next with Mercury and Gold was more like *Æs Ustum*; the other with Gold, Silver and Saturnine Mercury was divided into little Islands.

The Twenty First, They were all divided into little Islands.

The Twenty First of January, 1671, they appear'd like Moss and small Shrubs, differing somewhat in Colour,

viz.

viz. That with the Philosophic Mercury and Gold, had Spots and little Lines of pale Gold Colour: That with the Mercury, prepar'd with Regulus of Mars and Venus, more inclining to a red: That with the Gold, Silver and Mercury, with Saturnine Spots and Lines. The Vegetation visibly increas'd for ten Months, and from Moss to Stems, to Trees with Leaves and Fruit. I augmented the Fire a little every Month, till the Trees seem'd to wither; and about the twelfth Month they shrivel'd into a Substance like a dry red Earth. However, I still increas'd my Fire till

The Fourth of March, A. D. 167 $\frac{2}{3}$, and then one of the Eggs with the Saturnine Mercury, broke with a Noise like a Gun; this broke the Neck of another, and crack'd two more, with the Windows of my Athanor. Now I thought it high time to let the Fire out. I scarce recover'd any part of the broken Egg; in the rest I found some Precipitate, and a thick Amalgama; but in the Eggs with the Gold, Silver, and Mercury, I had some little hard bits like Block-Tin. With a Feather I carefully wip'd out the Precipitate from

from each Egg : In the remaining Egg with the Saturnine Mercury, I had two Ounces, two Scruples, and eight Grains. In the Eggs, with the Gold, Silver and Mercury, I had four Ounces and five Drams. In the Eggs, with the Sophic Mercury, I had five Ounces, one Scruple, and seven Grains. At first I would have perswaded my self that these Precipitates far exceeded those commonly made by Corrosive Menstruums : But after many Trials, I was convinc'd that they were not better than those made at a much cheaper rate. The Amalgama of Sol and Mercury, which I had left in three Eggs, I put into a Crucible, and set it in a melting Furnace ; but here again I was disappointed, for the Fire as easily evaporated my Mercury, as if it had been Virgin-Mercury from the Shops ; and the Gold (excepting what was lost by the breaking of the Egg) I had all just as pure as when I put it in. And thus I was satisfied, that after this Method, there could be no Union of Sol and Mercury ; and this made me less regard those Gentlemen that despis'd the Corrosive Dissolutions, especially since I often reviv'd Sol and Luna after they had been dissolv'd in Aqua Regia and Aqua

qua Fortis, and always found the noble Metals as perfect as before.

EXPERIMENT IV.

THE Tenth of March, A D. 1687, I dissolv'd four Ounces of Gold in a very well made Aqua Regia.

The Eleventh, I destill'd in a Retort the Aqua Regia from it.

The Twelfth, I return'd this Aqua Regia, with four Ounces more upon the Gold in the Retort, and again destilled it.

These Dissolutions, Destillations and Cohobations I repeated seven times; and then my Gold look'd like a pure red Gum, which I kept for further Use. I put two Pounds of fine Spirit of Salt, and twelve Ounces of my Mercury (which I had kept ten Years) prepar'd with Regulus of Mars and Venus, into a Retort; I destill'd the Spirit of Salt from it, and rais'd a Sublimate, which was mix'd with some Globules of Crude Mercury. I swept the Sublimate from the

the Neck and Top of the Retort, and wash'd it also out of the Receiver, with half a Pound of fresh Spirit of Salt, and destill'd it again; and then I had a greater quantity of Sublimate, with some very small Globules of Crude Mercury. I swept and wash'd my Retort and Receiver with new Spirit of Salt, and destill'd it the third time; when all the Mercury rose in a delicate Spungy Sublimate, as white as Snow, I broke the Retort (in the bottom I found some grey Faces) and scraped and wash'd the Sublimate into a clean Glass Body, and return'd the Spirit of Salt upon it, which totally dissolv'd it.

I put it into a Retort the fourth time, and again destill'd. The Sublimate rose white and pure, and left but very few Faces in the bottom, and those brighter than the first.

Once more I return'd the Sublimate and Spirit into a Glass Body, and dissolv'd it.

The fifth time I put it into a clean Retort and destill'd it again; and then all rose clear, without leaying any Faces.

I dissolv'd the abovemention'd Solar Gum in Aqua Regia, and this fine Sublimate in new Spirit of Salt; and put both these Dissolutions into a Retort, letting them stand four and twenty Hours; then by a gentle Sand Heat I drew off the Spirit, without raising any Sublimate. I return'd the Spirit upon the Gold and Sublimate, by which they were entirely dissolv'd. I destill'd as before, and this I five times repeated; and then I left the Sol and Mercury in the bottom of the Retort of the Consistence of a thin, clear red Syrup.

The fifth of *April*, *A. D.* 1688, I pour'd this Solar Syrup into a clean Glas, and wash'd the Retort with a little of the former drawn Spirit; then I divided it; putting to the one part an Ounce of thick Aqua Regia made of Mars and Venus, and half a Pound of pure rectify'd Spirit of Nitre; to the other part I only put the like quantity of the Spirit of Nitre, (I having first put the divided Syrup into two Retorts) the Spirit turn'd them both Muddy. I luted on the Receivers, and by a gentle Heat drew off eight or ten Ounces of Liquor from each, which I return'd with

with four Ounces of fresh Spirit of Nitre for each Retort, and then drew off twelve or fourteen Ounces. I cohobated the third time with four Ounces of new Spirit: I had no clear Dissolution in these three Cohobations. The fourth time I return'd the Spirit with one Pound of rectify'd Spirit of Venus into each Retort, and having shaken them well, I luted on the Receivers, and set them in warm Sand till next Day, when to my great Satisfaction I found a clear Dissolution. Then I made Fire under them, and destill'd about two thirds of the Liquor, which I return'd also with half a Pound of fresh Spirit of Nitre upon each, and by a gentle Heat drew off about one third of the weakest Liquor, which I kept by it self. When the Retorts were cold I added half a Pound of new Spirit of Nitre to each Retort, and destill'd almost to a dry bottom: That with the Aqua Regia of Mars and Venus was of a deep red Colour, the other a little Paler.

The Eighteenth, I return'd all my Liquor, and drew it over again; and at the third Cohobation I destill'd the Matter dry. I once more return'd what destill'd, and drew off about four Ounces

I dissolv'd the abovemention'd Solar Gum in Aqua Regia, and this fine Sublimate in new Spirit of Salt; and put both these Dissolutions into a Retort, letting them stand four and twenty Hours; then by a gentle Sand Heat I drew off the Spirit, without raising any Sublimate. I return'd the Spirit upon the Gold and Sublimate, by which they were entirely dissolv'd. I destill'd as before, and this I five times repeated; and then I left the Sol and Mercury in the bottom of the Retort of the Consistence of a thin, clear red Syrup.

The fifth of *April*, *A. D.* 1688, I pour'd this Solar Syrup into a clean Glas, and wash'd the Retort with a little of the former drawn Spirit; then I divided it; putting to the one part an Ounce of thick Aqua Regia made of Mars and Venus, and half a Pound of pure rectify'd Spirit of Nitre; to the other part I only put the like quantity of the Spirit of Nitre, (I having first put the divided Syrup into two Retorts) the Spirit turn'd them both Muddy. I luted on the Receivers, and by a gentle Heat drew off eight or ten Ounces of Liquor from each, which I return'd with

with four Ounces of fresh Spirit of Nitre for each Retort, and then drew off twelve or fourteen Ounces. I cohobated the third time with four Ounces of new Spirit: I had no clear Dissolution in these three Cohobations. The fourth time I return'd the Spirit with one Pound of rectify'd Spirit of Venus into each Retort, and having shaken them well, I luted on the Receivers, and set them in warm Sand till next Day, when to my great Satisfaction I found a clear Dissolution. Then I made Fire under them, and destill'd about two thirds of the Liquor, which I return'd also with half a Pound of fresh Spirit of Nitre upon each, and by a gentle Heat drew off about one third of the weakest Liquor, which I kept by it self. When the Retorts were cold I added half a Pound of new Spirit of Nitre to each Retort, and destill'd almost to a dry bottom: That with the Aqua Regia of Mars and Venus was of a deep red Colour, the other a little Paler.

The Eighteenth, I return'd all my Liquor, and drew it over again; and at the third Cohobation I destill'd the Matter dry. I once more return'd what destill'd, and drew off about four Ounces

ces from each Glass. When the Retorts were cool, I added four Ounces of new Spirit of Nitre into each, and let them stand in warm Sand till the next Day, and then again I found a clear Dissolution.

The Twenty Second, I destill'd to a dryness, and gave a strong Fire in Sand. When all was cool I cut the Retorts above their Contents; in the Necks I had some light Flowers which I separated. The Contents of the Retort with Sol and Mercury, was part red and part yellow. The other, with Sol, Mercury and the Aqua Regia from Mars and Venus, was of a deep red. I put them again into fresh Retorts, and return'd the Liquor I had drawn, adding to each Retort four Ounces of new Spirit of Nitre; I set them in warm Sand, and I had a clear Dissolution in twenty four Hours.

The Twenty Seventh, I drew off two Thirds of the Liquor, in which I dissolv'd half a Pound of the Secret Salt Armoniac, made with Spirit of Salt and Spirit of Urine. After I had shaken and divided the Dissolution, I return'd into each Retort, and let them stand till

The

The Twenty Ninth, in the Morning I made Fire under them, and drew off about three Fourths, which I cohobated.

The First of May, I destill'd to a dryness, and Sublimated part of the Salt Armoniac, and wash'd it down into the Retort with the destill'd Spirit. Then I sublimated as much as I could with a strong Fire. When all was cold I cautiously scrap'd the Sublimate into two Jarr-Glasses, and found it weigh'd eight Ounces, and (almost) two Drams. The Sublimate from the Gold and Mercury was very White; the other was Brownish, with small purple and yellow Lines. The Gold and Mercury which remain'd in the Retort was colour'd like fine Crocus Metallorum, and very Compact; the other was of a deeper Colour, inclining to a Purple, but not so Solid as the former.

The Fourth, I mix'd (by grinding) each Bottom with its proper Sublimate, and put them into Retorts, and pour'd upon each twelve Ounces of very strong Rectify'd Spirit of Nitre: after they had stood twenty four Hours in warm

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Sand,

Sand, and then again destill'd ; the Salt Armoniac sublimated, which I swept down into the Retorts, I destill'd and cohobated three times. The last time I gave the strongest Fire. When all was cool I carefully scrap'd off the Sublimate, and found it but six Ounces, three Drams and a half.

The Ninth, I reduc'd each Bottom into fine Powder, which I put into large Retorts, adding gradually two Pounds of Rectify'd Spirit of Wine into each Retort ; I set them in a Sand Heat, and fitted on two large Receivers. Without any more Heat, the Spirit (as I expected) began to destil with Violence and red Fumes, as in the Destillation of sweet Spirit of Nitre.

The Tenth, I gradually put into each Retort two Pounds more of rectify'd Spirit of Wine, and destill'd it. I repeated the Operation a third time, and then it destill'd without any Corrosive Taste or Smell.

The Fourteenth, I again reduced each Confection into fine Powder, which I put into uncut Bodies, and return'd the last destill'd Spirit of Wine upon them

them ; and kept them all Day in a simmering Heat.

The Fifteenth, This Morning I decanted the Spirit of Wine ; that from the first Body was of the Colour of Canary, and then had a little sharp rough taste. The Spirit of Wine from the Sol, Mercury, and the Aqua Regia of Mars and Venus was deeply tinged, (which some raw Chymist would take for Aurum Potabile) and of a rough Vitriolic Taste. I put two Pounds of fresh Spirit of Wine into each Body, and boil'd as before : That from the Gold and Mercury was not in the least tinged ; the other but very little, and was somewhat sharp.

The Seventeenth, I boil'd them with new Spirit of Wine ; which when cold had no Tincture, or acid Taste. I dry'd the Confections, and cut the Bodies low enough to take the Powders clean out with a Feather. That with the Sol and Mercury weighed six Ounces, three Drams and fourteen Grains. The other with the Sol, Mercury, and Aqua Regia of Mars and Venus, weighed seven Ounces, one Dram and eight Grains.

The Nineteenth, I put them into two Chrystal Eggs, which I fitted with Glafs Stoppers, and did not seal them Hermetically. I plac'd them in my Athanor, and kept a gentle Heat till

The First of June, I could not perceive any Alteration till this Day, when they began to vegetate with small white Lines. I kept them in my Athanor four Months, gradually increasing my Fire; and daily pleas'd my self with the various Figures and Colours; which were different from those the former Amalgamas (made without Corrosives) afforded me: for now they are vegetated with streight Lines, as small as fine Needles, up to the tops of the Eggs, with little Knobs at the end of each Line, some Red, others Green, and others of a lovely Yellow; they grew and withered four times, so that I may say, they had four Springs and as many Autumns: at last they stood smooth, and look'd like a melted Metal.

The Eighth of October, I increas'd my Fire to a full third Degree, and so kept it till

The

The Eleventh of December, When I was treated as the *Spanish Ambassador* was, For the mad Mob taking me for a Conjuror, or something worse, broke my Glasses and Athanor, saying, I was preparing the Devil's Fireworks, purposely to burn the City and *White-Hall*; and thus ended this Operation.

EXPERIMENT V.

THE *Eleventh of June*, A. D. 1694, I met with my old Friend, who assur'd me, that at the last, after forty Years Search, he had met with an ample Recompence for all his Trouble and Expences; this he confirm'd with some Oaths and Imprecations; but considering his great Weakness and Age, he look'd upon himself incapable to undergo the Fatigue of the Process. " I have here (says he) " a piece of Sol that I made from Sil- " ver about four Years past; and I can- " not trust any Man but you with so " rare a Secret; we will share equally " the Charges and Profit, which will " render us Wealthy enough to com- " mand the World.

D d ;

Then

Then he read the Process, which indeed did not seem unreasonable to me, especially since he offer'd at no peculiar Advantage to himself; thus I was persuaded to put it upon the Trial, and accordingly,

The Twenty First, I beat twelve Ounces of Japan Copper into thin Plates, and laid it *stratum super stratum*, with three Ounces of Flowers of Sulphur in a Crucible, which I placed in a melting Furnace, with a gentle Heat, till the Sulphureous Flames expir'd. When cold, I pulveriz'd the *Æs Ustum*, and stratify'd again; and this I repeated five times.

Then I put six Pounds of Iron Wire into a large Glass Body, and pour'd upon it twelve Pounds of Spirit of Salt; it stood six Days in a gentle Heat before it ceas'd from bubbling; then I decanted and filtred the Liquor; and to the undissolv'd Wire I put six Pounds more of Spirit of Salt, which I let stand its due time, and then decanted and filtred it. I put both the Liquors into a large Retort, and by a Sand Heat drew it off; towards the latter end (when the Drops came yellow) I chang'd the Receiver

Receiver, and increas'd my Fire to the highest Degree, in which I kept it four or six Hours. When all was cold I took off the Receiver, and found in the Neck of the Retort, a quantity of Flowers variously colour'd, like the Rainbow, The yellow Liquor in the Receiver weighed ten Ounces and a half; the Flowers two Ounces and three Drams: I put the Liquor and Flowers into a clean Bottle,

I put also half a Pound of Sal Enixum, and a Pound and a half of Spirit of Nitre into a Retort, and let it stand till the Salt was dissolv'd; then I added ten Ounces of Mercury, which I had destill'd through Quick Lime and Salt of Tartar. I drew off the Lime to a dryness, and found a fine yellow Mass in the bottom of the Retort. I return'd the Liquor with half a Pound of fresh Spirit of Nitre, and destill'd as before: I repeated it a third time, urging this last Cohobation with the highest Degree of Fire; when all was cold I found a various colour'd Mass in the bottom of the Retort.

Lastly, I dissolv'd four Ounces of fine Silver in one Pound of Aqua Fortis, and

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added

added four Ounces of the *Æs Usūm*, of the Mercurial Mass one Ounce and a half, of the Martial Tincture two Ounces and a half. When they had stood together in a Retort twenty four Hours, I decanted the Liquor, and pour'd four Ounces of new Spirit of Nitre upon that little Matter that was not dissolved. In the Morning I had a total Dissolution,

The Twenty sixth, I put all the Dissolution into a Retort, and destin'd it almost dry. I cohobated three times, urging the last with a very strong Fire till no Fumes appear'd, and not a drop fell.

The Twenty Eighth, I put the Matter left in the bottom of the Retort into a Crucible, and gently evaporated all the Corrosive Fumes, and with a fluxing Powder melted it down.

Now my Friend expected five Ounces of perfect Sol; but upon Examination, the Luna was the same (only half penny Weight worse) as when I dissolv'd it in Aqua Fortis. There were indeed some few Grains among the Scoria, which appear'd like Sol, and would not dissolve in Aqua Fortis.

Experiment

EXPERIMENT VI.

Notwithstanding our ill Success in the last, my old Friend press'd hard for another Experiment; saying he was very positive we should now succeed if we added a little Sol to the former prepared Mercury, Mars, Venus, and Luna; besides he offered to be at the Charges, and that I only should be the careful Operator; accordingly on

The Eleventh of February, A. D. 1699, he brought me two Drams of fine Gold, which I dissolv'd in Aqua Regia, and cohobated six times.

I dissolved also two Ounces of fine Silver, in half a Pound of Aqua Fortis. To this Dissolution I put two Ounces (he thinking there was too little in our last Work) of the Mercurial Mass; one Ounce and a half of the Martial Tincture; and two Ounces of the *Æs Vfusum*; and at last the aforementioned Gold, (dissolv'd in the Aqua Regia.) After they had stood a sufficient time on warm Sand, I decanted them clear. The Brown Faces I suppos'd to be Gold, but I soon dissolv'd them in Spirit of Nitre

Nitre, except a very little white Matter, and decanted this Dissolution also.

The Twenty Second, I put the two Dissolutions into a Retort, and drew off almost to a dry bottom; I cohobated Six times; at last drawing all off to a dryness.

The Twenty Eighth, I put the Substance (left in the bottom of my Retort) into a Crucible, proceeding as in the former Process, and melted it with a fluxing Powder, and pour'd it into an Ingot Mould; when it was cold I turn'd out the Ingot, and beat off the Scoria.

The Ingot was a little tinged; and the Scoria had some Grains of Metal much like Gold.

I reduced the Scoria into Powder, and by frequent Washing separated the yellow Metallic Particles, which weighed one Dram and eight Grains, and these stood the Test of Aqua Fortis.

I beat the Ingot into thin Lamels, and dissolv'd them in Aqua Fortis to separate the Luna from the Sol; and
here

here I found one Dram two Scruples, and five Grains of Gold.

I also separated the Luna from the Aqua Fortis by the help of Venus; and had one Ounce, six Drams, one Scruple and three Grains of Silver.

So I lost one Dram, one Scruple and seventeen Grains of Silver; and gain'd two Scruples and thirteen Grains of Gold.

But considering the Trouble and Expence of the Experiment, I believe the Reader will agree with me, That this Gold was bought too dear.

EXPERIMENT VII.

THE *Twenty First of August, A. D. 1704*, I dissolv'd two Ounces of fine Silver in a particular Aqua Fortis. I dissolv'd and cohobated seven times, and then the Luna remain'd in the bottom of the Retort like a transparent yellow Gumm,

With the Aqua Fortis I had drawn off, I dissolv'd one Ounce of Japan Copper,

I also dissolv'd one Ounce of the Mercury (prepared with Sal Enixum) with half an Ounce of the Tinctura Regalis of Flowers of Mars.

I drew the Water from the Mars and Venus, and cohobated five times; and then I had a deep red Gum with a greenish Reflection.

I dissolv'd both the Gums in their proper Menstruums, which I had drawn from them, and put these Dissolutions, and that of the Mercury together, and set them in a Sand Furnace. I destill'd the Spirit, return'd it and cohobated three times; I gave it a strong Fire the last time, which raised some Flowers. I found in the Retort five Ounces and one Dram of a red Substance, a little Spungy, and almost transparent,

The Sixteenth of September, I beat it to a gross Powder, and put it into a Crucible; I let it stand about an Hour in a gentle Heat to evaporate the Corrosive Spirits. When it was cold, I mix'd it with a little Soap, Borax, and Nitre, and with a strong Fire I made all haste to melt it, and pour'd it into an
an

an Ingot Mould. I found it weigh'd two Ounces, seven Drams, and four Grains; the colour of it was between Sol and Venus, which pleas'd me extremely: but my Satisfaction did not last long, for the Metal was not Malleable, neither would it stand the Test of Aqua Fortis; but on the contrary, it readily dissolv'd, tinging the Aqua Fortis a little blue. I cupell'd some part of it, and had good Silver again.

These and many more Experiments I have made, and always fell short of, or was entirely baffled in my Expectations.

I observe Physicians are well pleas'd with the Integrity of that Author, who relates Cases wherein he had not his desired Success; So I hope the Reader will pardon and credit me, since by faithfully discovering my own Disappointments and Miscarriages, I have shewed him how to avoid the like.

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